Council Bluffs Interstate System Improvements Project
Tier 2, Segment 3
Pottawattamie County, Iowa
IMN-029-2(55)49--13-78

ENVIRONMENTAL ASSESSMENT

And Section 4(f) De Minimis Impact Finding

Submitted Pursuant to 42 USC 4332(2)(c)

by the

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
IOWA DEPARTMENT OF TRANSPORTATION
OFFICE OF LOCATION AND ENVIRONMENT

Cooperating Agency
Surface Transportation Board

The signatures are considered acceptance of the general project location and concepts described in the environmental document unless otherwise specified by the approving officials. However, such approval does not commit to approve any future grant requests to fund the preferred alternative.

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A Agency Correspondence

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Acronyms and Abbreviations

APE	area of potential effect
AASHTO	American Association of State Highway and Transportation Officials
BP	British Petroleum
BNSF	Burlington Northern Santa Fe Railway
CBEC	Council Bluffs Energy Center
CBIS	Council Bluffs Interstate System
C-D	collector-distributor
CFR	*Code of Federal Regulations*
dBA	A-weighted decibel
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FR	*Federal Register*
FTA	Federal Transit Administration
HCM	Highway Capacity Manual
HDR	HDR Engineering, Inc.
HUD	U.S. Department of Housing and Urban Development
Interstate 29	I-29
Interstate 80	I-80
Interstate 480	I-480
IA 92	Iowa State Highway 92
IA 192	Iowa State Highway 192
IAIS	Iowa Interstate Railroad
Iowa DNR	Iowa Department of Natural Resources
Iowa DOT	Iowa Department of Transportation
ISD	Iowa School for the Deaf
Ldn	Day-Night Average Sound Level
L_{eq}	energy equivalent sound level
LRTP	Long Range Transportation Plan
MSATs	Mobile Source Air Toxics
NAC	noise abatement criteria
NCRA	National Cooperative Refinery Association
NDOR	Nebraska Department of Roads
NEPA	National Environmental Policy Act of 1969
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PCB	polychlorinated biphenyl
PRGs	Preliminary Remediation Goals
RCRA-SQG	Resource Conservation and Recovery Act - Small Quantity Generator
REC	recognized environmental condition

ROD	Record of Decision
RSLs	Regional Screening Levels
SIRE	Southwest Iowa Renewable Energy
SHPO	State Historic Preservation Office
SQG	small quantity generator
STB	Surface Transportation Board
SWPPP	Stormwater Pollution Prevention Plan
UPRR	Union Pacific Railroad
U.S. 6	U.S. Highway 6
U.S. 275	U.S. Highway 275
U.S. 75	U.S. Highway 75
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VdB	vibration decibel
VOC	volatile organic compound

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Section 1
Purpose and Need

SECTION 1

Purpose and Need

1.1 Introduction

This Tier 2 Environmental Assessment (EA) presents the results of studies and analyses conducted to determine the potential impacts of proposed improvements in Segment 3 of the Council Bluffs Interstate System (CBIS) in the Council Bluffs metropolitan area. This document is tiered to the Tier 1 Draft and Final Environmental Impact Statements (EIS) that evaluated impacts of the overall CBIS Improvements Project, which includes five segments of independent utility[1] and encompasses 18 mainline miles of Interstate and 14 interchanges along Interstate 80 (I-80), Interstate 29 (I-29), and Interstate 480 (I-480). More information about the tiering process is found below under Project Background.

This EA on Segment 3 of the Project is divided into the following sections:

- Section 1 provides background information on the Project and discusses the relationship between the earlier Tier 1 EIS and this Tier 2 EA. It also discusses the proposed action and the area studied, the purpose of the Project, and the need for the Project based on transportation problems that currently exist or are expected in the future.
- Section 2, Alternatives, identifies the range of alternatives considered for Segment 3 to address the transportation problems identified in Section 1. It also identifies the alternatives retained for further study in this EA and the preferred Segment 3 alternative.
- Section 3, Affected Environment and Environmental Consequences, describes the general environment for each resource affected by the proposed improvements. It also describes the potential environmental impacts of the Segment 3 Project and methods to avoid, minimize, and mitigate impacts.
- Section 4, Disposition, lists the agencies and organizations that will receive copies of this EA and the locations at which this EA will be available for public review.
- Section 5, Comments and Coordination, summarizes the agency coordination and public involvement efforts in conjunction with the Segment 3 Project.
- Section 6, Conclusion and Recommendation, summarizes resource impacts.
- Section 7, References, lists the sources cited in this EA.

For Segment 3, the Federal Highway Administration (FHWA) and Iowa Department of Transportation (Iowa DOT) determined that an EA is the appropriate level of Tier 2 study to comply with the National Environmental Policy Act (NEPA) requirements. The primary purpose of an EA is to clearly establish the significance of a project's environmental impacts. That analysis is included in this document.

[1] Federal Highway Administration regulations outline general principles to be used when framing a highway project. One of the principles is independent utility (23 CFR 771.111(f)), meaning that a project must be usable and must be a reasonable expenditure even if no additional transportation improvements are made in the area.

1.2 Project Background

1.2.1 Tier 1 and Tier 2 Relationship

In 1999, FHWA, Iowa DOT, and Nebraska Department of Roads (NDOR) began the CBIS Improvements Project by conducting a needs study (Iowa DOT, April 1999). The study identified the functional and operational problems along I-80, I-29, and I-480 and the broad-based transportation improvements needed to correct those problems. In consultation with federal, state, and local resource agencies, FHWA, Iowa DOT, and NDOR decided to conduct the NEPA analysis and decision-making process of the Project in two stages, using a tiered process. Tiering refers to the process of addressing a broad, general program, policy, or proposal in an initial EIS (Tier 1) and then analyzing a site-specific project element of the broader plan in a subsequent (Tier 2) EIS, EA, or Categorical Exclusion (CE). Figure 1-1 shows the tiered NEPA process as it relates to Segment 3.

The transportation agencies determined that the first tier would be a programmatic evaluation of the Project, including its limits, and the second tier would involve a detailed evaluation of five segments of independent utility. Figure 1-2 shows the five segments. The Tier 1 EIS produced the following outcomes:

- Approval of the general concept (preferred strategy) for improving the CBIS
- A segmentation plan for the corridor, which established the segments of independent utility for Tier 2 environmental studies and NEPA documents
- Documentation that has been referenced by Tier 2 studies to eliminate repetition and record the Tier 1 decision
- Agency and public input on the overall improvement plan

During Tier 1 of the CBIS Improvements Project, there was an examination of the overall Interstate system improvement needs, including an evaluation of the area's transportation needs, a study of alternatives to satisfy them, and broad consideration of the potential impacts of the Project on the human and natural environment. The analysis was done at a sufficient level of engineering and environmental detail to assist decision makers in selecting a preferred transportation strategy. Tier 1 included preparation of a Draft and Final EIS that identified environmental and social effects, evaluated at a planning level, of the Project. The NEPA process concluded with a Record of Decision (ROD) that stated the preferred plan for improvements to be implemented. For more information on the overall CBIS Improvements Project and the environmental analysis that was conducted during Tier 1, see the Tier 1 Draft EIS, Final EIS, and ROD on the CD at the back of this document.

In Tier 2, individual segments of the Interstate system (rather than the overall Interstate system) are being evaluated as individual projects. NEPA documents prepared for each individual segment produced the following outcomes:

- A level of detail sufficient to move elements of the plan toward construction
- Specific concepts/alignments

- Detailed environmental studies (such as habitat reviews for threatened and endangered species and noise modeling)
- Mitigation plans and permitting

Segment 3, the focus of this document, is located entirely in Iowa along I-80 and I-29. It begins east of the Indian Creek bridge and includes the remainder of the I-80/I-29 overlap section (portion of Segment 3 between the west terminus at Indian Creek and the I-80/I-29 East System interchange), the I-80/I-29 East System interchange, the South Expressway interchange, and the Madison Avenue interchange. Segment 3 also extends on I-29 south of the I-80/I-29 East System interchange. It includes the U.S. Highway 275 (U.S. 275) interchange and ends about 1 mile south of the I-80/I-29 East System interchange (see Figure 1-2).

1.2.2 Tier 2 Study Area

During the early phase of Tier 2 for Segment 3, Iowa DOT identified a preliminary footprint of the Project that included the required right-of-way for two concepts selected for further evaluation in Tier 2. The potential footprint was designated as a study area. As Tier 2 progressed, Iowa DOT evaluated concepts in Segment 3 that would eliminate railroad tracks in some areas and consolidate tracks in others to allow greater flexibility in designing the proposed Interstate improvements and to improve the efficiency of railroad operations in Council Bluffs, and improve safety by reducing the number of at-grade rail crossings. Section 1.4 addresses the need for improved safety and reduced delay. To evaluate the impacts of the potential changes to the roadway and railroad network, Iowa DOT expanded the environmental study area for Segment 3 beyond some of the limits that were investigated in the very early stages of Tier 2. The railroad network includes tracks and storage yards owned by the Burlington Northern and Santa Fe Railway (BNSF), Iowa Interstate Railroad, Ltd. (IAIS), and Council Bluffs Energy Center (CBEC). Figure 1-3 shows the original Segment 3 Tier 2 study area and the current expanded study area.

1.2.3 Agency Coordination

FHWA and Iowa DOT have been coordinating with various resource agencies during development of the Tier 1 and Tier 2 projects; Section 5 includes a summary of the coordination efforts. As a result of Project coordination concerning placing some rail lines out-of-service (with removal of rail at some locations) and construction of other rail lines, and potentially a change of service providers to at least one rail customer, FHWA and Iowa DOT determined that the Surface Transportation Board (STB) has jurisdiction by law and special expertise with regard to railroad resources. Therefore, FHWA and Iowa DOT invited STB to be a cooperating agency in the preparation of the EA for the Segment 3 Project.

The STB is an economic regulatory agency that Congress charged with resolving railroad rate and service disputes and reviewing proposed railroad mergers. STB serves as both an adjudicatory and a regulatory body. The agency has jurisdiction over railroad rate and service issues and rail restructuring transactions, such as mergers, line sales, line construction, and line abandonments. STB has an interest in the proposed action because the project involves the construction of new rail line and later, placing rail lines out-of-service. STB's authority for these two processes is detailed below.

STB authorization is required in advance for the construction and operation of new rail line that is part of the interstate rail network, pursuant to 49 United States Code (USC) § 10901 and 49 Code of Federal Regulations (CFR) § 1150.2. Conversely, STB approval is not required to improve, upgrade, or realign an existing rail line without extending the territory or markets that the railroad serves. Nor is STB approval required to construct or operate spur, industrial, team, switching, or side track (i.e. ancillary excepted track), pursuant to 49 U.S.C. § 10906, as long as the purpose and effect is not to extend the railroad's territory.

STB authorization is also required to close (i.e. abandon or discontinue service) rail lines that are part of the interstate rail network, pursuant to 49 USC § 10903. A full abandonment not only extinguishes the common carrier obligation for a rail line, but also removes the underlying right-of-way from STB's jurisdiction. Discontinuance of service authority relieves the carrier from its obligation to provide service over a rail line, but the carrier holds the right-of-way in reserve for potential future activation of rail service (i.e. rail banking the line). STB approval is not required, however, to abandon spur, industrial, team, switching, or side track, pursuant to 49 USC § 10906.

1.3 Proposed Action

FHWA and Iowa DOT are proposing geometric and capacity improvements to the I-29 and I-80 mainline in Segment 3 and the I-80/I-29 East System interchange, the South Expressway interchange, the U.S. 275 interchange, and the Madison Avenue interchange to safely and efficiently accommodate future traffic needs. In support of the Segment 3 Project and overall efficiency of transportation in the City of Council Bluffs, FHWA and Iowa DOT are also proposing to eliminate several railroad alignments and to develop new, consolidated tracks in Segment 3. STB authorization is required prior to project implementation.

1.4 Purpose and Need

The Tier 1 EIS indicated that the purpose of the CBIS Improvements Project is to examine needed transportation improvements in the study area that address existing and future travel demands. The Tier 1 purpose, as applied to Tier 2, includes not only roadway system improvements but other modes of transportation, such as rail, that influence the movement of people and goods through a local and regional area. Therefore, the original purpose of the CBIS Improvements Project as it includes Segment 3, remains unchanged.

The Tier 1 EIS also indicated that the need for the CBIS Improvements Project is based on a combination of the following factors: improving capacity and reducing congestion, improving safety, improving existing conditions, strengthening system linkages, correcting functional design issues, and accommodating planned development in the Interstate corridor. The complete purpose statement and need description pertaining to Tier 1 evaluation are found in Section 1 of the Draft Tier 1 EIS on the CD at the back of this document and are incorporated in this EA by reference in accordance with 40 CFR 1502.21.

[2] STB's regulatory authority extends to intrastate transportation that uses the interstate rail network. See 49 U.S.C. § 10501 (a)(2)(A).

The needs originally identified under Tier 1 have been reviewed for consideration of the proposed action to revise the roadway system and also modify the alignment of rail corridors in eastern Council Bluffs. The following needs required further evaluation to better understand the problem and to facilitate identification of reasonable alternatives to improve the transportation network:

- Reducing traffic congestion and providing for projected traffic demands—Review delays and travel time (for trains and vehicles).
- Reducing crash potential—Review the crash potential (train, vehicle, pedestrian) and safety concerns.

Currently, the Study Area includes three common carriers: BNSF (a Class I railroad), IAIS (a Regional or Class II railroad), and CBEC (a shortline or Class III railroad). The majority of the rail traffic is local either terminating or originating in Council Bluffs with some through (overhead) trains for BNSF that continue via Union Pacific Railroad tracks. Approximately 17 one-way train operations occur daily along the rail lines, 2 additional operations occur 5 days per week, and 1 operation only occurs approximately twice a month. Major commodities shipped by rail include ethanol, dried distillers' grain, coal, oil, grain, lumber, and steel.

At-grade rail crossings present the greatest risk for train crashes with vehicles and pedestrians, and also result in delays to train and vehicular traffic. Consequently, at-grade rail crossings and the associated problems were reviewed. Routes traveled by trains and their speed affect vehicular traffic at at-grade rail crossings and were reviewed to characterize the current problems. Over time, railroad, roadway, and bridge design has been done to accommodate existing structures, facilities, and property boundaries with minimal impact, requiring some design exceptions for both roadway and bridge construction and less than desirable design features for rail construction. The Project, however, provides an opportunity to review and address design and existing condition concerns to address safety and congestion problems in an efficient manner rather than in a piecemeal approach over time, with multiple improvements each disrupting traffic. The following subsections provide further definition of the needs to be addressed.

1.4.1 Capacity and Congestion

The 91 at-grade rail crossings in the City of Council Bluffs affect and interrupt the flow of vehicular traffic in part by involving reduced vehicle speeds across the railroad tracks, as well as by causing congestion through delays when trains are crossing or are stopped along the tracks. The study area was reviewed for the location of at-grade rail crossings. Table 1-1 identifies the crossing locations, the use and type of traffic control devices, the average daily traffic, and trains per day. It should be noted that the number of trains shown in Table 1-1 reflect the total number of trains crossing the roadway including both through and switching train movements, not the number of times the crossing is closed due to train activity.

TABLE 1-1
Existing At-Grade Rail Crossing Summary

At-Grade Rail Crossing	Traffic Control Devices	Average Daily Traffic	Trains per Day
Main Street	Crossbucks, gates, flashing lights	900	12
6th Street	Crossbucks, flashing lights	1,000	12
7th Street	Crossbucks, gates, flashing lights	600	12
8th Street	Crossbucks, gates, flashing lights	3,600	12
7th Street (near 14th Avenue)	Crossbucks, gates, flashing lights	600	7
6th Street (near 15th Avenue)	Crossbucks, gates, flashing lights	1,000	8
16th Avenue (Main Street)	Crossbucks, gates, flashing lights	7,500	8
16th Avenue (east of Main Street)	Crossbucks	5,400	12
29th Avenue (Bartlett Tracks)	Crossbucks	2,500	1
29th Avenue (BNSF Mainline)	Crossbucks, gates, flashing lights	2,500	11
29th Avenue (CBEC Mainline)	None	600	4
30th Avenue (by South Expressway)	Crossbucks, gates, flashing lights	11,600	12
32nd Avenue (by South Expressway)	Crossbucks, gates, flashing lights	10,800	12
E South Omaha Bridge Road	Crossbucks, gates, flashing lights	700	4
192nd Street	Crossbucks	300	4
W Levee Bridge	Crossbucks	0	4
E Levee Bridge	None	0	4
Farmer's Crossing (east of 192nd Street)	None	0	4

Sources: Federal Railroad Administration (FRA), 2010; HDR, 2011a.

Vehicular delay occurs within the study area at several at-grade rail crossings. For example, the I-80/I-29 Southbound ramp terminal intersection with South Expressway experiences regular traffic signal interruption as a result of BNSF track east of South Expressway (30th Avenue crossing). Frequently, drivers wait for the train to pass; this causes regular queuing on the ramp, at times extending onto the Interstate. Almost daily, one train event results in a 10-minute interruption in the signal operations, and maximum train events can cause up to a 30-minute continuous interruption in signal operations at this location. Congestion along the busy South Expressway corridor increases as a result of the train interruptions. Table 1-2 shows the estimated queues and vehicular delays caused by train events at the at-grade rail crossings identified in Table 1-1; the 30th Avenue and 32nd Avenue crossings have the most traffic and the most total vehicle delay.

The average delay is categorized using the concept of "level of service" (LOS) at signalized intersections, documented in the *2000 Highway Capacity Manual* (HCM). The blocked crossing time at a highway/rail at-grade crossing operation is represented by the red phase of a traffic signal. When the blocked crossing period begins, vehicles begin to queue. When the blocked crossing period ends, queued vehicles begin to depart at the constant vehicle departure rate until the queue dissipates. LOS for signalized intersections is defined in terms of delay and is expressed as a letter grade ranging from LOS A (free flowing) to F (severely congested). Specifically, the HCM uses "average control delay per vehicle." Control delay includes initial deceleration delay, queue move-up time and final acceleration delay.

TABLE 1-2
Existing No-Build Vehicular Queues, Delay, and Levels of Service

At-Grade Rail Crossing	Vehicle Queue (Number of Vehicles)	Average Delay for All Vehicles (Minutes per Vehicle)	LOS	Total Daily Delay to Vehicles Delayed by Trains (Minutes)
Main Street	6	0.28	B	250
6th Street	7	0.26	B	264
7th Street	4	0.25	B	150
8th Street	24	0.24	B	849
7th Street (near 14th Avenue)	5	0.09	A	115
6th Street (near 15th Avenue)	7	0.21	B	348
16th Avenue (Main Street)	44	0.34	C	3,924
16th Avenue (east of Main Street)	38	0.27	B	1,444
29th Avenue (Bartlett Tracks)	34	0.08	A	211
29th Avenue (BNSF Mainline)	15	0.18	B	440
29th Avenue (CBEC Mainline)	4	0.09	A	53
30th Avenue (by South Expressway)	31	0.24	B	2,736
32nd Avenue (by South Expressway)	29	0.24	B	2,547
E South Omaha Bridge Road	5	0.09	A	62
192nd Street	2	0.09	A	26
W Levee Bridge	0	0.00	A	0
E Levee Bridge	0	0.00	A	0
Farmer's Crossing (east of 192nd Street)	0	0.00	A	0
Total Daily Delay to Vehicles Delayed by Trains (Hours)		**223.65**		

Sources: HDR, 2011a.

1.4.2 Safety

The State of Iowa has been identified as one of the top 10 states with the most reported highway-rail at-grade crossing crashes/incidents at public and private crossings during 2006, 2007, and 2008 (*Federal Register* 2010). Table 1-3 summarizes the crashes that have occurred at the at-grade rail crossings identified in Table 1-1 based on the most current crash data available through 2009 (FRA, 2010). Although the average number of crashes per year has declined in the most recent 5-year period, the risk of crashes still exists.

The at-grade rail crossings within the Study Area involve relatively low vehicle and train speeds, and are representative of most of the intersections with problems in the State of Iowa. More than 70 percent of the train/vehicle crashes that occurred in Iowa from 2005 through 2009, occurred with vehicles traveling less than 25 miles per hour (mph); more than 40 percent of these crashes occurred with trains traveling less than 15 mph (Iowa DOT 2010).

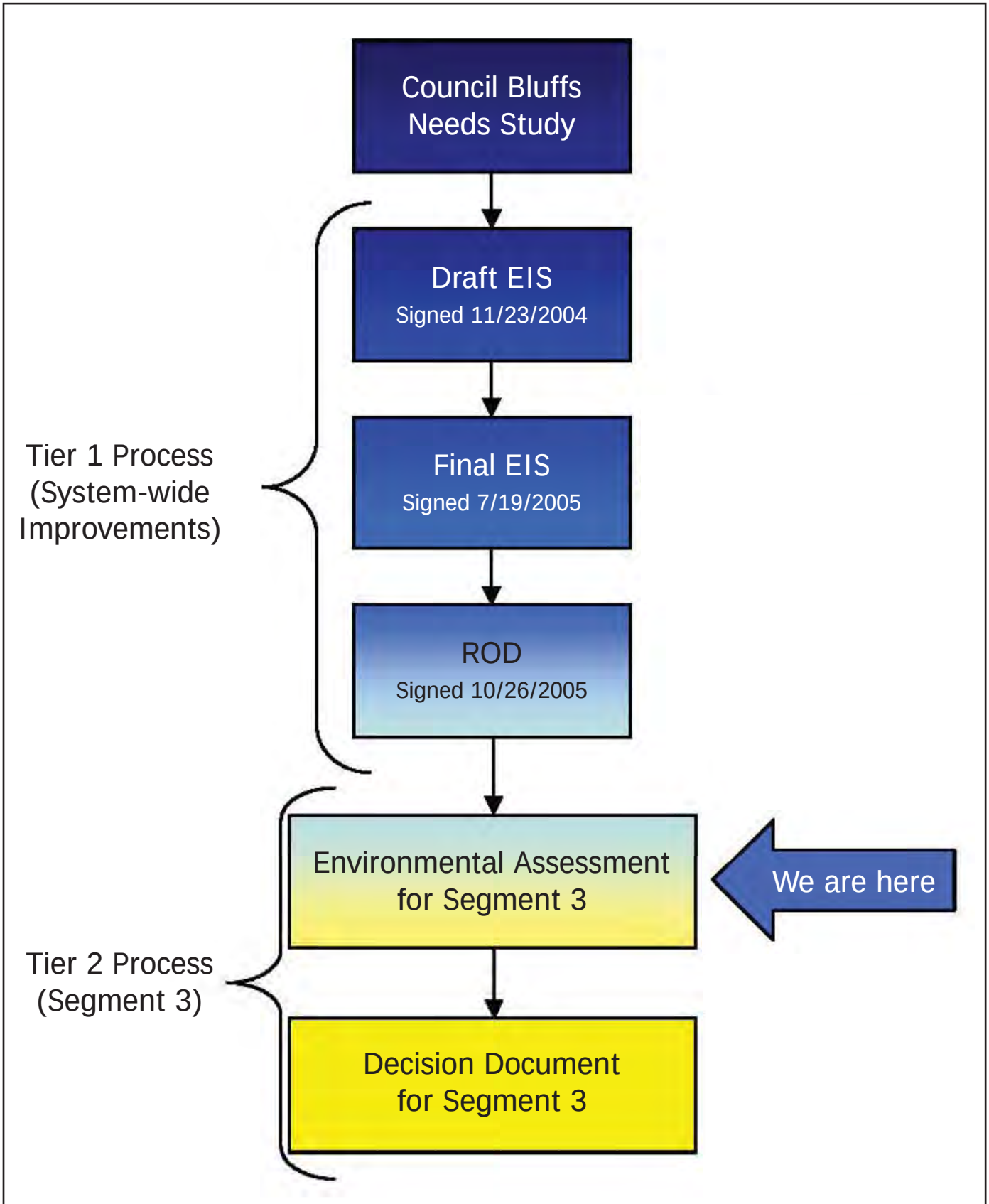
Traffic delays noted in the previous section also have safety concerns. For example, the I-80/I-29 Southbound ramp terminal intersection with South Expressway experiences delay from the 30th Avenue crossing resulting in vehicular queuing on the ramp sometimes extending to the interstate, causing a safety problem for approaching drivers.

Potential safety concerns associated with train traffic are a particular issue near a school. The Lewis Central High School and Middle School campus is bisected by CBEC railroad tracks that haul coal and shipments of ethanol. Currently, the schools are located on the east side of the track and the school buses are housed on the west side of the track. The buses have to cross the tracks multiple times a day on school days. In addition to the bus parking facilities, school sports fields are located west of the tracks; this requires anyone from the school who uses these fields to cross the tracks, creating a safety concern for the high school and/or middle school students, coaches, and guardians. Ethanol (a hazardous material) shipments present enough of a safety concern that transport is only allowed to occur between the hours of midnight and 5:00 A.M.

TABLE 1–3
Summary of Crashes at Existing At-Grade Rail Crossings

At-Grade Rail Crossing	1975–2009	2005–2009
Main Street	1	0
6th Street	2	0
7th Street	0	0
8th Street	3	0
7th Street (near 14th Avenue)	0	0
6th Street (near 15th Avenue)	1	0
16th Avenue (Main Street)	16	1
16th Avenue (east of Main Street)	11	1
29th Avenue (Bartlett Tracks)	0	0
29th Avenue (BNSF Mainline)	4	1
29th Avenue (CBEC Mainline)	0	0
30th Avenue (by South Expressway)	0	0
32nd Avenue (by South Expressway)	0	0
E South Omaha Bridge Road	0	0
192nd Street	0	0
W. Levee Bridge	0	0
E. Levee Bridge	0	0
Farmer's Crossing (east of 192nd Street)	0	0

Source: FRA, 2010”



Iowa Department of Transportation

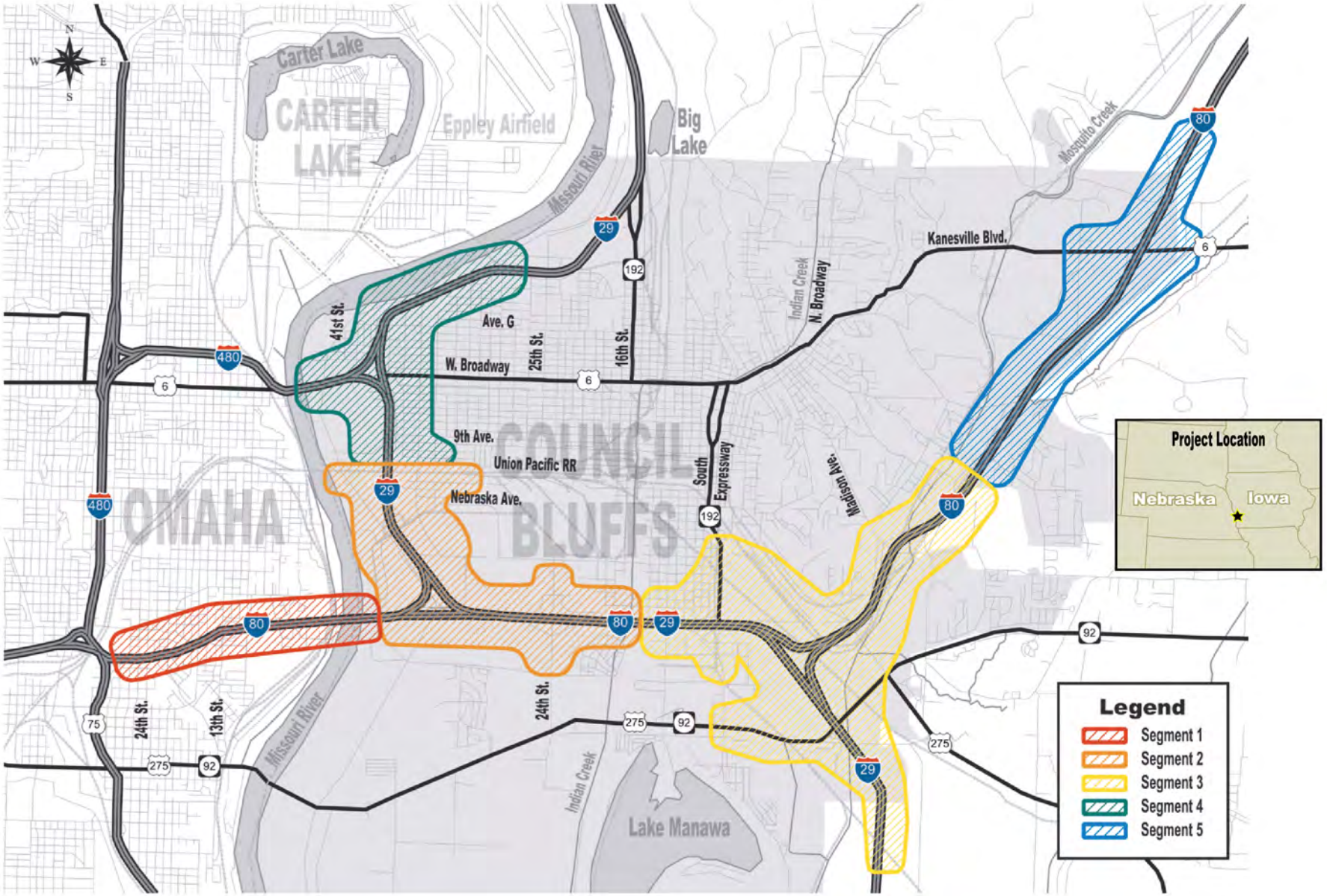
Project Study Process

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
1-1

TB022008004MKE Fig1-1_Project_Study_Process_04_Mar_2011 03.04.11 cae



Iowa Department of Transportation

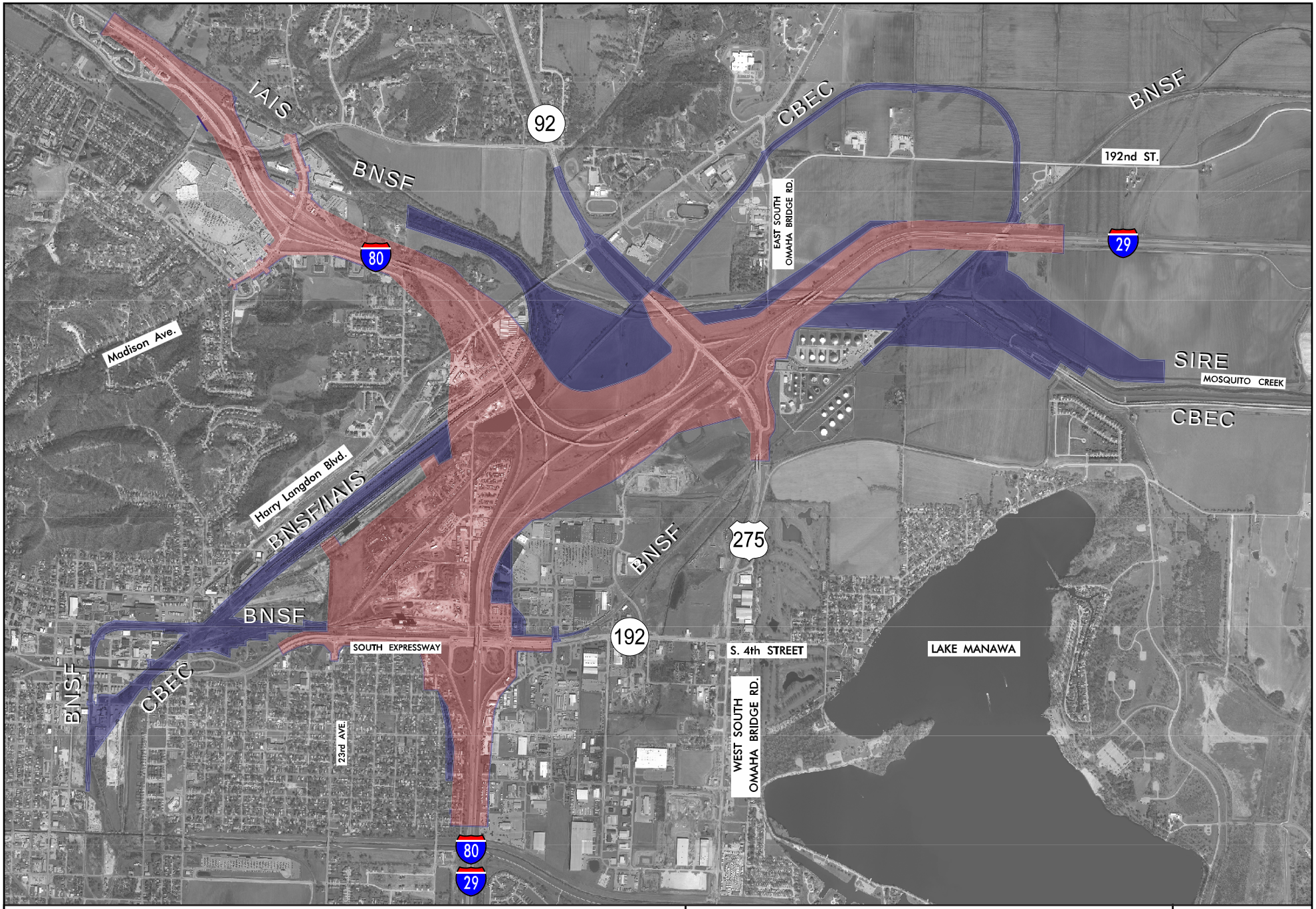
Project Segments

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
1-2

TB022008004MKE Fig1-2_Project_Segements_05_Mar_2011 03.04.11 cae



LEGEND

ORIGINAL STUDY AREA

ADDITIONAL STUDY AREAS

Sources:
1. Aerial Photography – MAPA, 2008

Iowa Department of Transportation

Current and Previous Study Limits

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
1-3

TB022008004MKE Fig1-3_Current_Prev_Limits_12_Mar_2011 03.09 .11 cae

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Section 2
Alternatives

SECTION 2

Alternatives

This section summarizes the Tier 1 alternatives development process and the preferred alternative identified in the 2004 Draft EIS and 2005 Final EIS. This section also describes the Tier 2 alternatives development and refinement process for Segment 3, provides a comparison of the alternatives, and identifies the preferred alternative for Segment 3. The potential for phased construction of Segment 3 is also summarized in this section.

2.1 Tier 1 Alternatives Development Summary

In the Tier 1 Draft EIS, the range of alternatives considered for the overall CBIS Improvements Project included:

- The Construction Alternative, which would reconstruct all or part of the CBIS
- The No-Build Alternative, which included committed capacity and access improvements in the study corridor and all planned off-system improvements per the MAPA's 2025 Long Range Transportation Plan (LRTP)
- Improvements to alternate modes of transportation (enhance transit accommodations and expand bicycle and pedestrian trails)
- Transportation management strategies
- Improvements to other metro-area roadways
- Construction of a new crosstown roadway

Among the alternatives considered in the Tier 1 Draft EIS, only the Construction Alternative and the No-Build Alternative were carried forward for detailed evaluation in the Tier 1 Final EIS. The Construction Alternative was carried forward because it was the only alternative that satisfied the current and projected transportation needs of the CBIS. The No-Build Alternative was retained as a baseline for comparing project impacts and to meet the NEPA requirement that the impacts of no action be considered.

Three important decisions affecting the nature of the Segment 3 improvements were made in Tier 1. First, it was determined that the part of Segment 3 between the west terminus at Indian Creek and the I-80/I-29 East System Interchange, known as the overlap section, should be developed as a dual-divided cross section. The dual-divided section will separate I-80 and I-29 with a barrier. Eastbound and westbound I-80 will be a freeway consisting of the two "inside" roadways with three travel lanes in each direction. I-29 will consist of the two "outer" roadways with three travel lanes in each direction (see Figure 2-1) providing service to local interchanges such as the South Expressway interchange. The existing Segment 3 overlap section is a five-lane divided roadway (three lanes eastbound, two westbound) with a depressed grass median. Second, to meet future traffic needs, it was also determined that six basic lanes (three in each direction) are required for I-80 east of, and I-29 south of, the I-80/I-29 East System Interchange. Finally, it was decided in Tier 1 that the

I-80/I-29 East System Interchange will remain a fully directional system interchange, and that full access will continue to be provided at the South Expressway/Iowa State Highway 192 (IA 192), U.S. 275/ Iowa State Highway 92 (IA 92), and Madison Avenue interchanges.

Tier 1 ended with the signing of the Record of Decision (ROD) on October 26, 2005. The ROD identified the Construction Alternative, which was the preferred alternative in the Draft and Final EISs, as the selected alternative for the CBIS Improvements Project.

2.2 Tier 2 Alternatives Process

In Tier 2, there were two phases in the alternatives process. In the first phase, which occurred from late-2005 through mid-2008, Iowa DOT developed a specific alignment and interchange design for the two Tier 1 Construction Alternative's reasonable build concepts. Iowa DOT then conducted additional preliminary design to identify the best alternative between the two and conducted additional design on the sole remaining alternative.

In the second phase of the Tier 2 alternatives process, Iowa DOT evaluated potential modifications to railroad corridors in Segment 3 to improve the efficiency of the transportation system and the potential for redevelopment. A study commenced in early 2007 to coordinate with local railroad companies and acquire input to help identify potential alignment concepts (HDR, 2010a). By late 2007, Iowa DOT had completed sufficient analyses to determine that consolidating railroad corridors in the study area, done in conjunction with the proposed Tier 1 CBIS roadway improvements, had the potential to benefit the roadway and railroad networks. The proposed improvements were developed with consideration of meeting needs and resolving problems identified for the CBIS Improvements Project (see Section 1.4). Benefits of railroad corridor consolidation were identified for those design elements that provided additional improvements to the transportation network; the benefits are identified and described in Section 2.4.1.1, Railroad Consolidation Alternatives.

By early- to mid-2008, Iowa DOT began a concurrent process of developing and refining railroad corridor consolidation alternatives and roadway options that would accommodate the changes to the local railroad network. Because the Phase 1 and Phase 2 alternatives processes were focused on different outcomes and alternatives, they are described separately in the sections below.

2.3 Range of Alternatives—Phase 1 Roadway Improvements Only

2.3.1 No-Build Alternative

Although the Tier 1 process determined that the No-Build Alternative will not meet the project purpose and need requirements, it was retained for evaluation in this document in accordance with the NEPA requirement that the impacts of no action be considered. The No-Build Alternative represents the baseline conditions for the Segment 3 study area. It includes committed capacity and access improvements in the Segment 3 study area, as well as all planned off-system improvements identified in the *MAPA 2030 Long Range Transportation Plan (Metropolitan Area Planning Agency,* May 2006).[1] Figure 2-2 identifies the off-system

[1] www.mapacog.org/2030lrtp.pdf

improvements that are part of the No-Build Alternative for Segment 3 of the CBIS Improvements Project. The No-Build Alternative includes short-term restoration work and ongoing maintenance to ensure continued bridge and roadway pavement integrity along the Interstate. The design of the Interstate system—location, geometric features, and current overall capacity—would remain largely unchanged, but minor operational improvements could occur. More information about improvements under the No-Build Alternative can be found in Table 13 and Map 4 in MAPA's plan.

The No-Build Alternative provides a baseline for comparison to the Build Alternatives' environmental effects.

2.3.2 Build Alternative

During Tier 1, up to eight concepts were studied in each segment to improve the Interstate system in the study area. A workshop was held with Iowa DOT, NDOR, FHWA, MAPA, and the City of Council Bluffs to identify concepts for further refinement in each segment. NDOR input was limited to Segment 1 (which is partly within Nebraska) and Segment 4 (which includes I-480 that handles traffic to and from Nebraska). During this screening process, the initial concepts were compared to see how each concept met the project objectives, met the defined criteria, and potentially affected the human and natural environment. The concepts dismissed during the initial evaluation were unable or less able to meet the defined criteria or project objectives.

The two concepts developed for Segment 3 during Tier 1 were refined and reviewed in detail early in Tier 2. The primary goal of the refined concept development process in the early stages of Tier 2 was to perform additional conceptual development to a level of design that allowed a better estimate of the construction cost, possible right-of-way needs, and environmental impacts. Additional development included concept-level vertical alignment design and a more detailed constructability evaluation. In addition to the geometric design refinement, a more detailed traffic analysis was performed that included traffic simulation. Build Alternatives A and B were the two alternatives that remained at the conclusion of the refined concept development phase early in Tier 2.

2.3.2.1 Alternatives A and B

With Build Alternative A, the I-80 mainline would curve through the proposed I-80/I-29 East System Interchange, which would be nearly centered over the existing system interchange. Keeping the proposed I-80/I-29 East System Interchange in essentially the same location as the existing system interchange would mean that the ramps for the U.S. 275/IA 92 interchange would be closer to the proposed I-80/I-29 East System Interchange ramps than is allowed under current American Association of State Highway and Transportation Officials (AASHTO) standards. Having ramps from adjacent interchanges in close proximity requires traffic entering or exiting the Interstate system at those interchanges to make quick lane changes in a short distance (known as weaving). In moderate to heavy traffic such lane changes are unsafe. To compensate for interchange ramps in close proximity to one another and to improve safety would require the construction of braided ramps (one ramp elevated over another ramp at an acute angle, increasing the length of the bridge) and collector–distributor (C–D) roads. A C–D road is a one-way road next to the Interstate that functions as a ramp. With Alternative A, the weaving traffic would be moved from the Interstate to the C–D road (Figure 2-3A).

The South Expressway/ IA 192 service interchange would be a folded diamond interchange, similar to the existing interchange; the U.S. 275/IA 92 interchange would be a three-quadrant diamond interchange with a loop ramp in the southwest quadrant (Figure 2-3A). The Madison Avenue interchange would be a tight diamond interchange design, with the ramps located closer to I-80 than the existing ramps (Figure 2-3B). Because the ramp intersections would be located closer to I-80, there would be a greater distance between the ramps and adjacent intersections on Madison Avenue, creating better traffic operations than under existing conditions.

Build Alternative B would replace the existing reverse curve on I-80 through the system interchange with a straight alignment. To accommodate the straight alignment, much of the proposed system interchange would be shifted north of the existing system interchange. The north shift provides the recommended ramp spacing and improves mainline weaving lengths along I-29 between the I-80/I-29 East System Interchange and the U.S. 275/IA 92 service interchange. The braided ramps and C–D roads that are part of Build Alternative A are not needed with this alternative. Ramp connections for I-80 and I-29 would provide access to the inner and outer roadways of the dual-divided section (Figures 2-4A and 2-4B). The interchange configurations of the three service interchanges would be the same as under Build Alternative A.

Build Alternatives A and B meet the guiding principles and design criteria established in Tier 1 for the CBIS Improvements Project. The key difference between the alternatives is the treatment of the I-80 mainline through the I-80/I-29 East System Interchange. With Build Alternative A, I-80 is on a reverse curve through the I-80/I-29 East System Interchange. Build Alternative B has a straight alignment through the system interchange, which requires moving much of the proposed interchange north of its present location.

Build Alternative A has been eliminated from further consideration, primarily based on geometric issues and preliminary cost estimates. The straight alignment through the I-80/I-29 East System Interchange (Build Alternative B) is preferable to the reverse curve section through the interchange because drivers are required to make fewer decisions in an area that will have high traffic volumes entering and exiting the Interstate system. In addition, Alternative B would provide greater spacing between the I-80/I-29 East System Interchange and the U.S. 275/IA 92 interchange, and precludes the need for the braided ramps and C–D roads associated with Alternative A. As a result, Alternative B is estimated to cost substantially less than Build Alternative A. Preliminary impact analysis determined that the two alternatives would have similar environmental impacts. As part of Iowa DOT's concurrence point process, resource agencies supported the selection of Build Alternative B for further Tier 2 design work at a meeting on April 26, 2006. See Section 5 for more information.

2.4 Range of Alternatives—Phase 2 Roadway Improvements and Railroad Consolidation

2.4.1 Build Alternative

2.4.1.1 Railroad Consolidation Alternatives

Iowa DOT's railroad consolidation study was conducted to identify concepts that would place tracks in out-of-service condition or remove them in some areas and consolidate tracks

in others to improve the efficiency and safety of roadway traffic and railroad operations in Council Bluffs (HDR, 2010a). The efficiency of the transportation network in Council Bluffs would be improved by meeting the following needs (identified in Section 1.4):

- Reduced delays (for trains and vehicles)
- Reduced travel time (for trains and vehicles)
- Reduced crash potential (train, vehicle, and pedestrian)

Additionally, the opportunity for reconfiguration of the interstate system and railroads involved consideration of the following benefits in addition to meeting project needs:

- Reduced idling at at-grade intersections, resulting in reduced air emissions, which include greenhouse gases
- Consolidation of Lewis Central School property, which is currently separated by CBEC railroad tracks
- Reduced train noise in an urban area
- More efficient train routes that minimize vehicle and train conflicts
- Potential redevelopment adjacent to current and future railroad tracks
- Shortened bridges at the South Expressway interchange, with reduced construction and maintenance costs

Iowa DOT developed and evaluated 13 primary railroad alternatives by early 2008. The alternatives were lettered A through F, with some sub-alternatives. Figure 2-5A illustrates the alignments considered for the alternatives. The primary railroad alternatives examined the feasibility of consolidating the rail corridors on the south side of Council Bluffs to reduce the number of at-grade crossings while facilitating the proposed roadway improvements. The alternatives were developed with consideration of railroad customers such as Southwest Iowa Renewable Energy (SIRE), British Petroleum (BP)/Amoco, Bartlett Grain, Hansen-Mueller, Western Engineering, and Weyerhaeuser.

Iowa DOT conducted a phased screening process for the alternatives during 2008 and early 2009. The alternatives were screened based on project needs, environmental issues, and benefits to the Interstate system, railroad operations, and the City of Council Bluffs.

At the conclusion of the railroad alternatives comparison, Iowa DOT identified a recommended railroad alternative that had environmental impacts similar to most other alternatives analyzed and represented the best balance between improving transportation system efficiency in eastern Council Bluffs and environmental impacts. Figure 2-5B illustrates the recommended alignment of the railroad alternative and the location of the railroad tracks proposed for removal or out-of-service designation.

2.4.1.2 Roadway Alternatives

Iowa DOT evaluated nine roadway concepts that would accommodate the railroad alternatives. All nine concepts had similar geometric configurations for the US. 275 and Madison Avenue interchanges. For the East System interchange, two main configurations were considered to account for either a separate southbound I-29 to eastbound I-80 ramp

and a northbound I-29 to eastbound I-80 ramp merge with I-80, or a single merge with I-80 for both ramps. For the South Expressway interchange, different configurations of interchange types were investigated including diamond and loop ramp configurations as well as configurations to handle the weaving traffic between South Expressway and the East System Interchange. In comparing the nine roadway concepts, Iowa DOT used the following criteria:

- Driver expectancy
- Traffic operations and safety
- Constructability and construction cost
- Bridge concepts
- Potential environmental impacts

Based on a detailed evaluation of the nine roadway concepts, Iowa DOT identified one concept to incorporate with the rail alternative. The selected concept included the single ramp merge for the East System interchange and a loop configuration for the South Expressway interchange; this concept offered the best operational efficiency by allowing for more weaving distance and required the least amount of right-of-way. The concept avoided most impacts and minimized impacts on the Anderson Excavating property (a site with known contamination), and resulted in no adverse effect to the Bartlett Grain elevator (a historic property). Both properties are located east of the South Expressway and north of 29th Avenue.

The combination of the preferred railroad alternative and roadway concept is known as Revised Build Alternative B. This alternative is shown in Figures 2-6A through 2-6C.

2.5 Alternatives Comparison

The No-Build Alternative, Build Alternative B (the former alternative carried forward), and Revised Build Alternative B (including railroad consolidation improvements) are the Tier 2 range of alternatives for Segment 3. The following compares the three alternatives.

2.5.1 No-Build Alternative

The No-Build Alternative represents the baseline conditions for the Segment 3 study area. Proposed LRTP improvements (other than the Segment 3 Project) would still occur (see Figure 2-2). This alternative also includes committed capacity and access improvements in the Segment 3 study area as well as short-term restoration work and ongoing maintenance to ensure continued bridge and roadway pavement integrity along the Interstate.

2.5.2 Build Alternative

2.5.2.1 Build Alternative B (2006 Alternative Carried Forward)

Build Alternative B is shown in Figures 2-4A and 2-4B. This alternative has a straight alignment through the proposed I-80/I-29 East System Interchange. To accommodate the straight alignment, a large part of the reconfigured interchange would be shifted north of the existing system interchange (Figure 2-4A). Ramp connections for I-80 and I-29 would provide access to the inner and outer roadways of the dual-divided section.

The Madison Avenue interchange would be a tight diamond interchange design, with the ramps located closer to I-80 than the existing ramps (Figure 2-4B). Because the ramp intersections would be located closer to I-80, there would be a greater distance between the ramps and adjacent intersections on Madison Avenue; this increased distance would allow better traffic operations than under existing conditions.

The South Expressway/ IA 192 service interchange would be a folded diamond interchange, similar to the existing interchange, and the U.S. 275/IA 92 interchange would be a three-quadrant diamond interchange with a loop ramp in the southwest quadrant (Figure 2-4A). The centerline of the mainline I-29 would be shifted about 160 feet east of the existing centerline at the U.S. 275/IA 92 interchange. The ramp terminal intersections would be in locations similar to the existing terminals and would allow construction of a larger I-29 southbound exit loop ramp that would improve interchange traffic operations.

2.5.2.2 Revised Build Alternative B (with Railroad Corridor Consolidation)

Revised Build Alternative B is shown in Figures 2-6A through 2-6C. The roadway part of Revised Build Alternative B shares many of the design characteristics of Build Alternative B.

Revised Build Alternative B has a straight alignment through the proposed I-80/I-29 East System Interchange. To accommodate the straight alignment, a large part of the reconfigured interchange would be shifted north of the existing system interchange (Figure 2-6A). The north shift would provide the recommended ramp spacing and improve mainline weaving lengths along I-29 between the system interchange and the U.S. 275/IA 92 service interchange. Ramp connections for I-80 and I-29 would provide access to the inner and outer roadways of the dual-divided section. As shown in Figure 2-6A, two options for improving 29th Avenue are still under consideration. Both options would create a new intersection with South Expressway and 23rd Avenue, but only one would be implemented.

The Madison Avenue interchange would be a tight diamond interchange design with a geometric layout very similar to Build Alternative B (Figure 2-6B). The South Expressway/ IA 192 service interchange would be a folded diamond interchange, similar to the existing interchange, but with relocated and separate entrances to the Interstate to eliminate mainline weaving (Figure 2-6A). The U.S. 275/IA 92 interchange would be a three-quadrant diamond interchange with a loop ramp in the southwest quadrant (Figure 2-6C). Improvements along U.S. 275/IA 92 would extend to Harry Langdon Boulevard.

By placing railroad tracks out-of-service under I-80/I-29 at the South Expressway/IA 192 interchange, it is possible to lower the Interstate profile about 9 feet and shorten the proposed Interstate and ramp bridges at the interchange; the tracks would also be removed at this location. The tracks would be removed only at locations needed for construction purposes. Placing railroad tracks out-of-service or removing them at some locations and adding tracks at other locations would close 16 at-grade railroad crossings (three of which have virtually no vehicular traffic) and would add three at-grade crossings. Figure 2-5B shows the proposed railroad alignment under Revised Build Alternative B, areas where track is planned to be placed out-of-service or removed, and locations where at-grade crossings would be closed and added. Figure 2-5C shows the current route traveled by BNSF from the Council Bluffs Subdivision to the Bayard Subdivision as well as the route that would be traveled as a result

of the railroad corridor consolidation; the movement could also occur in the opposite direction but for clarity purposes is shown only in one direction in the figure.

Within the U.S. 275/IA 92 interchange area, the proposed railroad corridor would raise the I-29 profile by 13 to 19 feet and would raise the U.S. 275/ IA 92 profile over Mosquito Creek by 14 feet. The U.S. 275/IA 92 profile over I-29 would be raised about 10 feet. Accommodating a second CBEC railroad track is also proposed through the East System Interchange. The proposed interchange roadways and bridge piers would accommodate these revised railroad features.

Specific details on how BNSF, IAIS, and CBEC would provide future service to existing customers are not known at this time, but are being developed through a series of agreements. Depending on the resolution of the agreements, licensing authority from the Surface Transportation Board may be required.

2.5.2.3 Comparison of Build Alternatives

Revised Build Alternative B has roadway features similar to Build Alternative B. The two alternatives differ in that the railroad consolidation improvements in Revised Build Alternative B are not part of Build Alternative B. In addition, minor roadway improvements to accommodate the railroad consolidation improvements would not occur for Build Alternative B. As a result of accommodating railroad consolidation to realize additional benefits to traffic congestion and safety, Revised Build Alternative B has different profiles than Build Alternative B in areas where railroad tracks would be placed out-of-service, removed, or added.

From an environmental/socioeconomic resources standpoint, the types of impacts of Build Alternative B and Revised Build Alternative B are generally similar, although the amount of impacts differs for most resources. Table 2-1 shows the quantifiable environmental resource impacts within the preliminary impact areas under Build Alternative B and Revised Build Alternative B.

Because the area affected would be approximately 40 percent larger under Revised Build Alternative B than under Build Alternative B, most resources would incur more effects. For both alternatives, design considerations included avoidance of environmental resources when possible and minimizing impacts on the resources when unavoidable. Most of the residential displacements are located north of the overlap section, whereas most of the commercial relocations are located north of the system interchange. The ratio of impact on wetlands and floodplains between the two build alternatives is comparable to the ratio of the total affected area. The affected area is similar in the East System Interchange, but is greater north of 29th Avenue and in the southern part of the study area. Both alternatives would primarily affect palustrine emergent wetlands. The linear feet of waterways potentially affected is similar because both alternatives would require reconstruction of the East System Interchange, which is intersected by waters of the U.S. Although Revised Build Alternative B would impact a small area of potential habitat for a threatened or endangered species, the habitat is marginal and no threatened or endangered species were detected during a survey of the area. Under Revised Build Alternative B, the impact on a trail would be minor and would be mitigated by construction of another trail connection. Three additional regulated material sites would be intersected by the impact area of Revised Build Alternative B compared to Build Alternative B, but no adverse impacts are anticipated.

TABLE 2-1
Summary of Potential Impacts for Segment 3

Resource[a]	Potential Impact[b]	
	Revised Build Alternative B	Build Alternative B
Total impact area [c]	849	614
Displacements (residences, apartment complexes, commercial)	66, 0, 12	56, 0, 12
Noise receivers [d]	18	13
Wetlands (acres) [e]	18.3	12.7
Waterways (feet) [f]	4,800	4,055
Floodplain (acres) [g]	437.0	312.3
Threatened or endangered species potential habitat (acres) [h]	1.7	0
Architectural/historic resources (sites) [i]	0	0
Archaeological resources (sites) [j]	0	0
Potential Section 4(f) resources (sites) [k]	1	0
Parks, recreation areas, trails	0, 0, 1	0, 0, 0,
Wildlife and waterfowl refuge	0	0
Conservation area	0	0
Historic sites	0	0
Regulated materials (moderate and high risk sites) [l]	7	4

[a] Resources include those evaluated during Tier 1 concurrence points.

[b] The impacts were calculated based on data generated in intensive-level surveys conducted in the original and expanded study area as well as geographic information system (GIS) data bases.

[c] Current impact area includes existing as well as new right-of-way area. Displacements were estimated by comparing the proposed preliminary impact line with aerial photographs identifying buildings and parcel boundaries. Full parcel acquisitions for businesses were assumed to result in displacement regardless of whether a business building was present. Actual new right-of-way to be acquired would be derived by comparing parcel data boundaries with new right-of-way required, accounting for area that would be disturbed by construction, but not acquired. Consequently, actual right-of-way acquisition would be less.

[d] The 13 noise receivers for Build Alternative B were identified by a model developed in 2008. The 18 noise receiver impacts for Revised Build Alternative B were identified by a model developed in 2010 (CH2M HILL 2010).

[e] Wetland acreage impacts were estimated from field delineations and compared to the proposed preliminary impact area.

[f] Waterway impacts were estimated from aerial photographs and the diagrams of the preliminary design. There would be no channel modification of Mosquito Creek; however, the channel of Drainage Lateral 5 would be modified within the East System Interchange footprint.

[g] Floodplain acreage impacts were estimated from the February 2005 Flood Insurance Rate Maps (the most current data) for Pottawattamie County.

[h] Potential habitat includes only acreage for the eastern massasauga rattlesnake in wetlands near the southern terminus of the Project. An area previously identified as potential rattlesnake habitat for Build Alternative B was destroyed during construction of the Metro Crossing Shopping Center and consequently would not be impacted under either build alternative.

[i] Architectural/historic impacts are based on sites documented in field study reports (Tallgrass Historians 2006a, 2008a, and 2008b).

[j] Archaeological resource impacts are based on Iowa Office of the State Archaeologist data and sites documented in field study reports (Tallgrass Historians 2006b, 2008c, and 2010).

[k] Potential Section 4(f) resource impacts were estimated from parcel data, various public maps and Web sites, Iowa DNR data, and Tallgrass Historians' cultural resource reports. No wildlife and waterfowl refuges or historic sites that would qualify for Section 4(f) protection are known within the preliminary impact area. Most short-term disruptions of trail continuity for construction activities would meet temporary occupancy requirements so that no 4(f) use impacts would occur. One exception would be for an unnamed trail beneath a U.S. 275 bridge proposed for reconstruction.

[l] Regulated material site impacts were estimated from parcel data, aerial photographs, field reconnaissance, Environmental Data Resources, Inc. (EDR) database, and Phase I and II Environmental Site Assessments in 2006 and 2008.

Operational impacts were also compared for the two build alternatives. Revised Build Alternative B includes improvements that would not be realized by Build Alternative B. Benefits provided by Revised Build Alternative B are summarized as follows:

- Reduced crash potential between vehicles and trains because of a reduction in the number of at-grade crossings—A total of 16 at-grade intersections would be eliminated, and only three at-grade intersections would be added.
- Reduced delays for vehicular and train traffic in eastern Council Bluffs—This impact was quantified and projected to result in an estimated savings of $10.1 million (in 2010 dollars) over 20 years from 2010 to 2030.
- Reduced travel time for vehicles and trains in eastern Council Bluffs—Vehicular routes with many fewer at-grade crossings can be planned for shorter paths, thus reducing travel time (especially considering elimination of delays at former at-grade intersections). Trains would have shorter pathways, with the greatest reduction realized by BNSF trains traveling from the Bayard Subdivision to the Council Bluffs Subdivision for approximately 2 miles in only 10 minutes versus the 7-mile distance and average 75-minute timeframe under current operations (see Figure 2-5C). More efficient train routes should result in further reduction in traffic delays at the remaining at-grade crossings.
- Reduced vehicle idling at at-grade intersections and more efficient train operations—This would result in fewer carbon, volatile organics, and nitrogen emissions. Carbon dioxide and nitrous oxide are primary greenhouse gases caused in part by fuel combustion; a decrease in those air emissions would reduce greenhouse gas emissions.
- Elimination of the ethanol transport route from the SIRE ethanol plant along the CBEC tracks adjacent to Lewis Central High School and Middle School—The route would be relocated, eliminating current transport restrictions on CBEC and eliminating the transport of large quantities of hazardous materials adjacent to schools.
- Consolidation of Lewis Central School property separated by CBEC railroad tracks—The three ball fields currently southwest of the tracks would be joined with the campus that includes other athletic fields and facilities.
- Reduced train noise in an urban area—Removal of train traffic through urban areas of Council Bluffs would result in an overall reduction in noise generated by the trains themselves as well as elimination of train horns at out-of-service at-grade crossings.
- Potential redevelopment adjacent to current and future railroad tracks—Relocation of rail corridors from urban areas of eastern Council Bluffs to more undeveloped areas would allow more flexibility for future expansion of existing facilities. For example, Con Agra has been considering expansion at its facility at 1023 4th Avenue, but is limited by the current rail configuration.
- Shortened bridges at the South Expressway interchange—This would result in reduced construction and maintenance costs.

The construction cost of Revised Build Alternative B (approximately $510 million in 2010 dollars) is estimated to be 20 percent greater than that of Build Alternative B (approximately

$420 million in 2010 dollars). In addition to the railroad consolidation improvements, Revised Build Alternative B includes construction costs for interstate capacity enhancements such as the South Expressway Eastbound Ramp extension and an additional lane for westbound I-80 within the East System Interchange. Although the Revised Build Alternative B construction costs are estimated to be approximately 20 percent greater than Build Alternative B, Iowa DOT recognizes that Revised Build Alternative B provides a more complete transportation (roadway and railroad) solution and that the higher costs are offset by the factors noted above including improved safety and operational benefits.

2.6 Alternatives Carried Forward

Even though the environmental impacts of Revised Build Alternative B are greater than Build Alternative B, the added transportation system benefits of decreased travel time and decreased accident potential justifies the additional impacts. Because Build Alternative B does not include railroad corridor consolidation activities needed to maximize the efficiency and safety of Council Bluffs' transportation systems, Build Alternative B has been eliminated from further consideration. Revised Build Alternative B is the only build alternative carried forward for further evaluation. As part of Iowa DOT's concurrence point process, resource agencies supported the selection of Revised Build Alternative B for detailed evaluation in the EA at a meeting on April 28, 2010.

Section 2.5.2.3, above, identifies beneficial impacts realized only with Revised Build Alternative B. Additionally, Revised Build Alternative B better addresses the needs identified for the project with respect to reduced crash potential, reduced delays, and reduced travel times. Modification of the rail alignments would substantially reduce the number of at-grade crossings in eastern Council Bluffs, thus reducing vehicular delays and the potential for vehicle/train collisions; the modification would also provide an additional reduction in travel time for vehicles in this area of Council Bluffs.

Although it does not serve the Project's purpose and need, the No-Build Alternative was carried forward to serve as a baseline for comparing the impacts of Revised Build Alternative B.

2.7 Preferred Alternative

The proposed Segment 3 improvements for Revised Build Alternative B would bring I-80 and I-29 up to current engineering standards, modernize the roadway to accommodate future traffic needs, and improve the efficiency and safety of highway and railroad operations in Council Bluffs. Iowa DOT has identified Revised Build Alternative B as its preferred alternative (Figures 2-6A, 2-6B, and 2-6C). In addition to the alignment, the number of lanes on I-80/I-29, and the interchange designs discussed previously for Revised Alternative B, other features of the preferred alternative include the following:

- The centerline of the mainline I-29 would be shifted about 160 feet east of the existing centerline at the U.S. 275/IA 92 interchange. The ramp terminal intersections would be in locations similar to those of the existing terminals and would allow construction of a larger I-29 southbound exit loop ramp that would improve interchange traffic operations. Within the U.S. 275/IA 92 interchange area, the proposed railroad corridor

would raise the I-29 profile by 13 to 19 feet and would raise the U.S. 275/IA 92 profile over Mosquito Creek by 14 feet.

- To better accommodate an incident on eastbound I-80 that would divert traffic to southbound I-29 through the overlap section, three lanes would be provided on southbound I-29 through the South Expressway interchange and two lanes would be provided for the system interchange from southbound I-29 to eastbound I-80 ramp.
- There would be changes to the local street network in the residential neighborhood north of I-80/I-29 and west of South Expressway. A new alleyway would be constructed, connecting 13th Street and 7th Street just north of the I-80/I-29 improvements. A new connection would also be constructed to connect 28th Avenue and 6th Street adjacent to the new South Expressway westbound entrance ramp.
- Retaining walls would be constructed on the south side of the overlap section from South 11th Street to the north side of the South Expressway and from the south side of South Expressway to the Home Depot store in the Lake Manawa Power Centre to minimize impacts on adjacent properties.
- Turning lanes would be added to South Expressway between a point just north of the eastbound exit ramp and a point just north of the westbound entrance ramp.
- 29th Avenue would be relocated and extended to create a new intersection with 23rd Avenue to accommodate the new I-80/I-29 East System Interchange.
- The BNSF railroad tracks under I-80/I-29 at the South Expressway/IA 192 interchange would be removed, which would lower the Interstate profile about 9 feet and shorten the proposed Interstate and ramp bridges at the interchange. Removing the BNSF tracks would also eliminate railroad crossings at the intersection of South Expressway and 16th, 30th, and 32nd Avenues.
- Madison Avenue would be reconstructed between Woodbury Avenue and Rue Street to add turn movements and to accommodate the new I-80 ramps. A short segment of Rue Avenue would be realigned slightly south to accommodate the proposed I-80 improvements. A retaining wall would be constructed along a segment of Woodbury Avenue parallel to I-80 and along the north and south sides of I-80 within the Madison Avenue interchange to minimize impacts on adjacent properties.
- Existing bridges on I-80 at Woodbury Avenue that accommodated a former railroad line would be removed and replaced with fill.
- The segment of the CBEC railroad tracks and right-of-way from the east side of I-29 to just north of IA 92 would be turned over to the City of Council Bluffs. This would eliminate the part of the railroad that currently bisects Lewis Central's campus and would remove railroad crossings at East South Omaha Bridge Road and 192nd Street.

The impacts of the Segment 3 Project are discussed in Section 3 and are listed in Table 6-1 in Section 6.

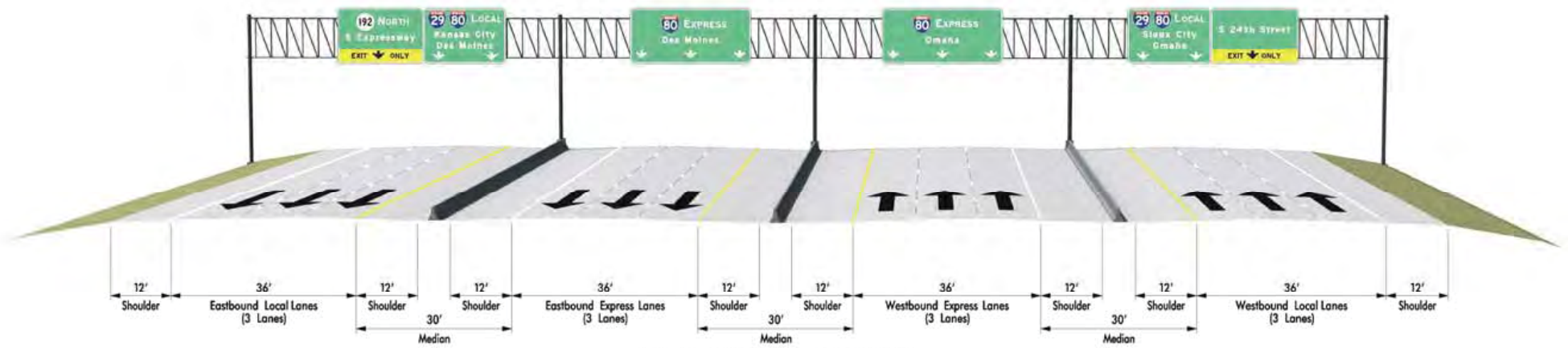
2.8 Phased Construction

To allow construction of the CBIS Improvements Project in the face of funding limitations, Iowa DOT plans to divide construction of the Segment 3 Project into two phases: the Interim Project and the Ultimate Project. The Interim Project would include the following activities constructed in the order listed below:

- The U.S. 275/IA 92 interchange, the I-29 bridges over Mosquito Creek, and the I-29 mainline to the south Project terminus would be constructed.
- The railroad consolidation improvements would be constructed, and train traffic would be switched to the new rail network. Following the switch, tracks slated to be removed, such as the BNSF tracks east of South Expressway, would be removed. In conjunction with that work some intersections that formerly had railroad crossings may be reconstructed.
- The entire overlap section, the South Expressway interchange, and most of the I-80/I-29 East System Interchange would be constructed. Construction would also include I-80 east to, but exclusive of, the Madison Avenue interchange.

The Interim Project would include parts of Segment 2 (which is addressed in design and NEPA as a separate project) because Segments 2 and 3 are closely tied together. The estimated cost range for the Interim Project for both Segments 2 and 3 is $890 million to $975 million in Year of Expenditure dollars. Approximately ¾ of the work being done in the Interim Project is being constructed in Segment 3. Overall on the CBIS Project, Segment 1 is almost complete, and the 24th Street component of the Segment 2 Project is complete.

With the Ultimate Project, the remainder of I-80 to the east terminus of Segment 3 would be constructed, including the Madison Avenue interchange. Part of the I-80 eastbound entrance loop from South Expressway and a slip ramp to I-29 southbound not constructed in the Interim Project would be constructed as part of the Ultimate Project. The Interim Project is shown in Figures 2-7A and 2-7B, and the Phase 2 Improvements are shown in Figures 2-8A and 2-8B.



DUAL-DIVIDED FREEWAY

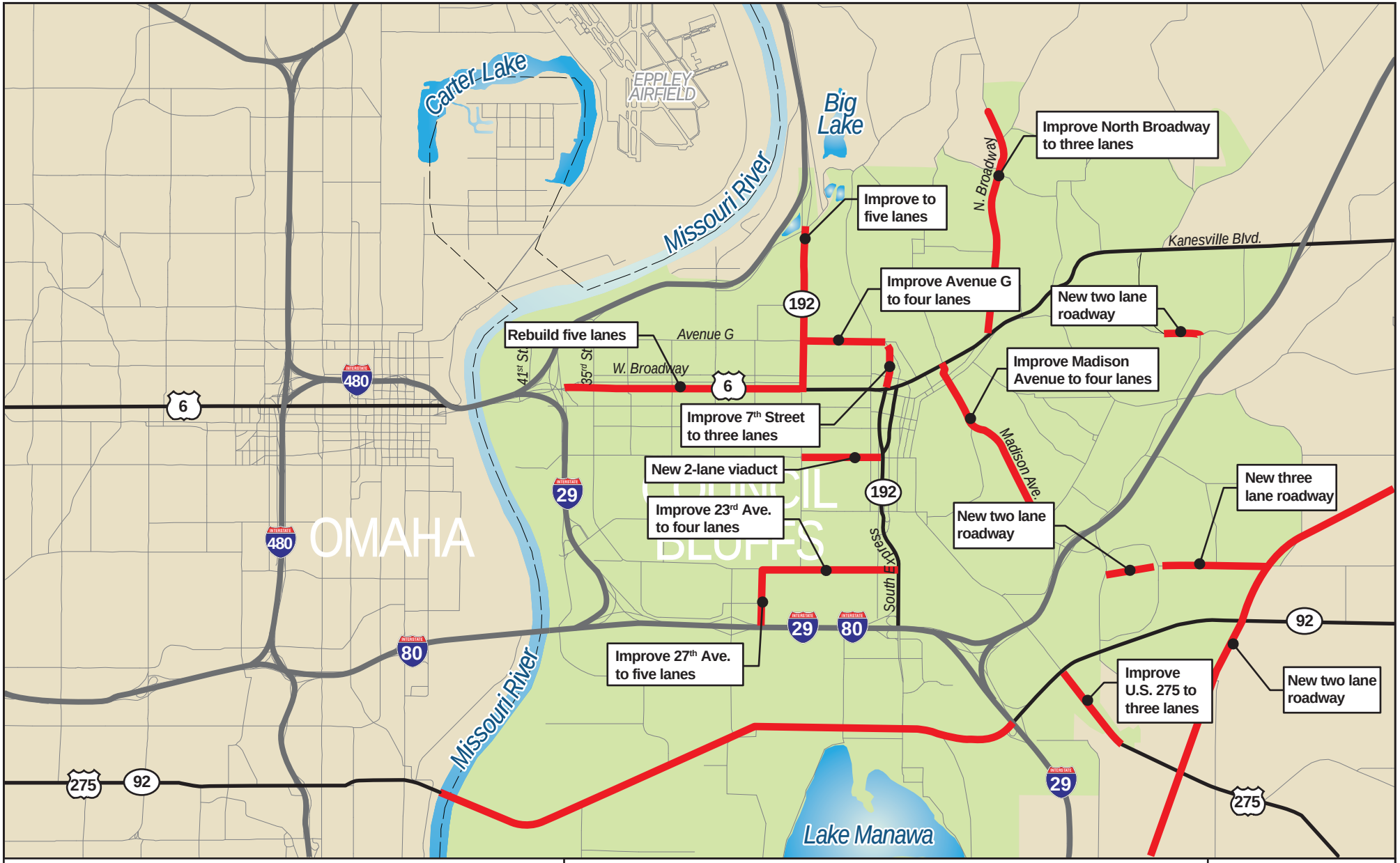
Iowa Department of Transportation

I-80/I-29 Overlap Section: Dual-Divided Cross-Section Segment 3

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-1



Iowa Department of Transportation

Source: MAPA LRTP, 2030

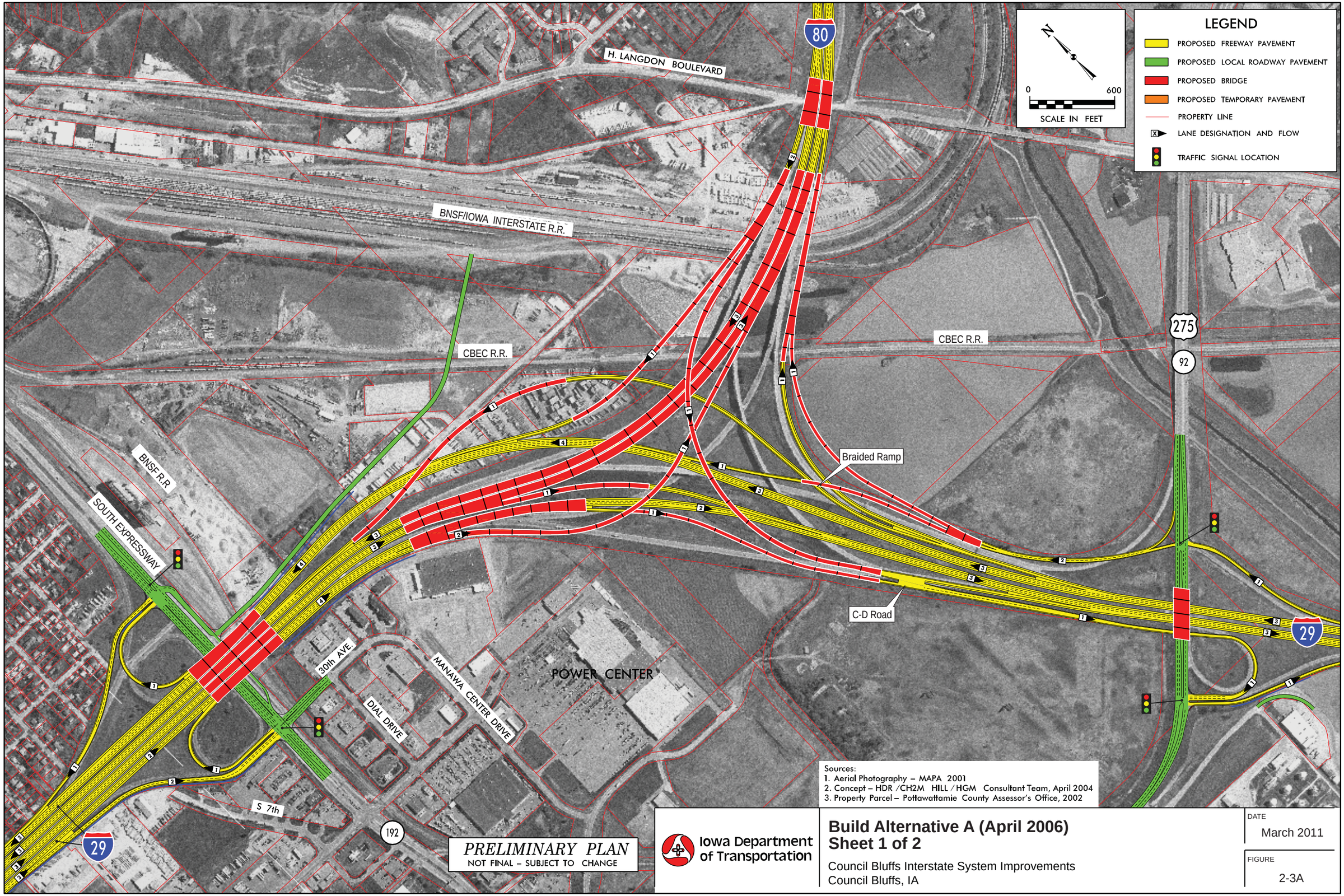
No-Build Alternative

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
2-2

TB022008004MKE Fig2-2_No-Build_Alternative_08_Mar2011 03.04.11 cae/sls



Sources:
1. Aerial Photography – MAPA 2001
2. Concept – HDR /CH2M HILL / HGM Consultant Team, April 2004
3. Property Parcel – Pottawattamie County Assessor's Office, 2002

Iowa Department of Transportation

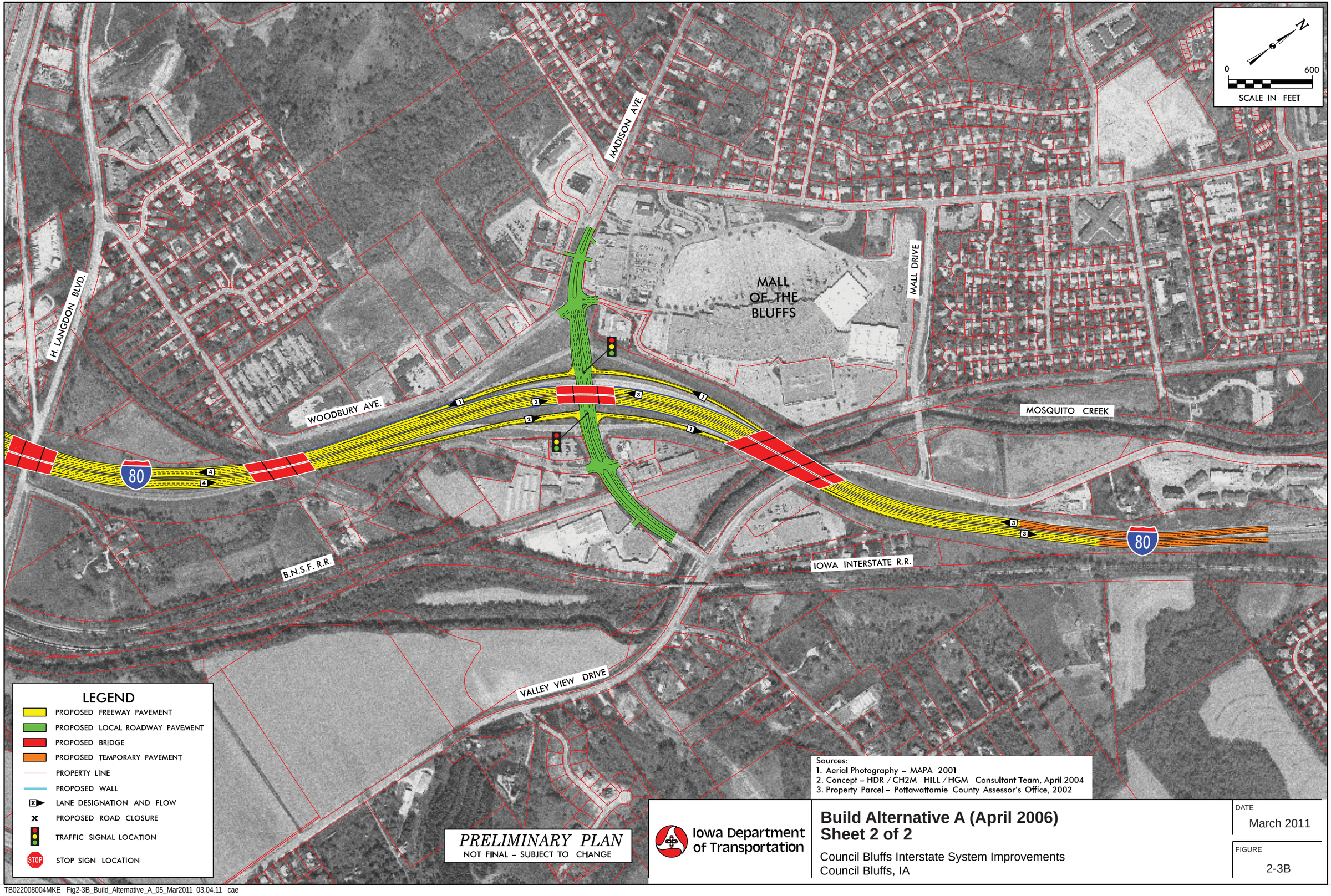
Build Alternative A (April 2006) Sheet 1 of 2

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-3A

TB022008004MKE Fig2-3A_Build_Alternative_A_04_Mar2011 03.04.11 cae



Sources:
1. Aerial Photography – MAPA 2001
2. Concept – HDR / CH2M HILL / HGM Consultant Team, April 2004
3. Property Parcel – Pottawattamie County Assessor's Office, 2002

Iowa Department of Transportation

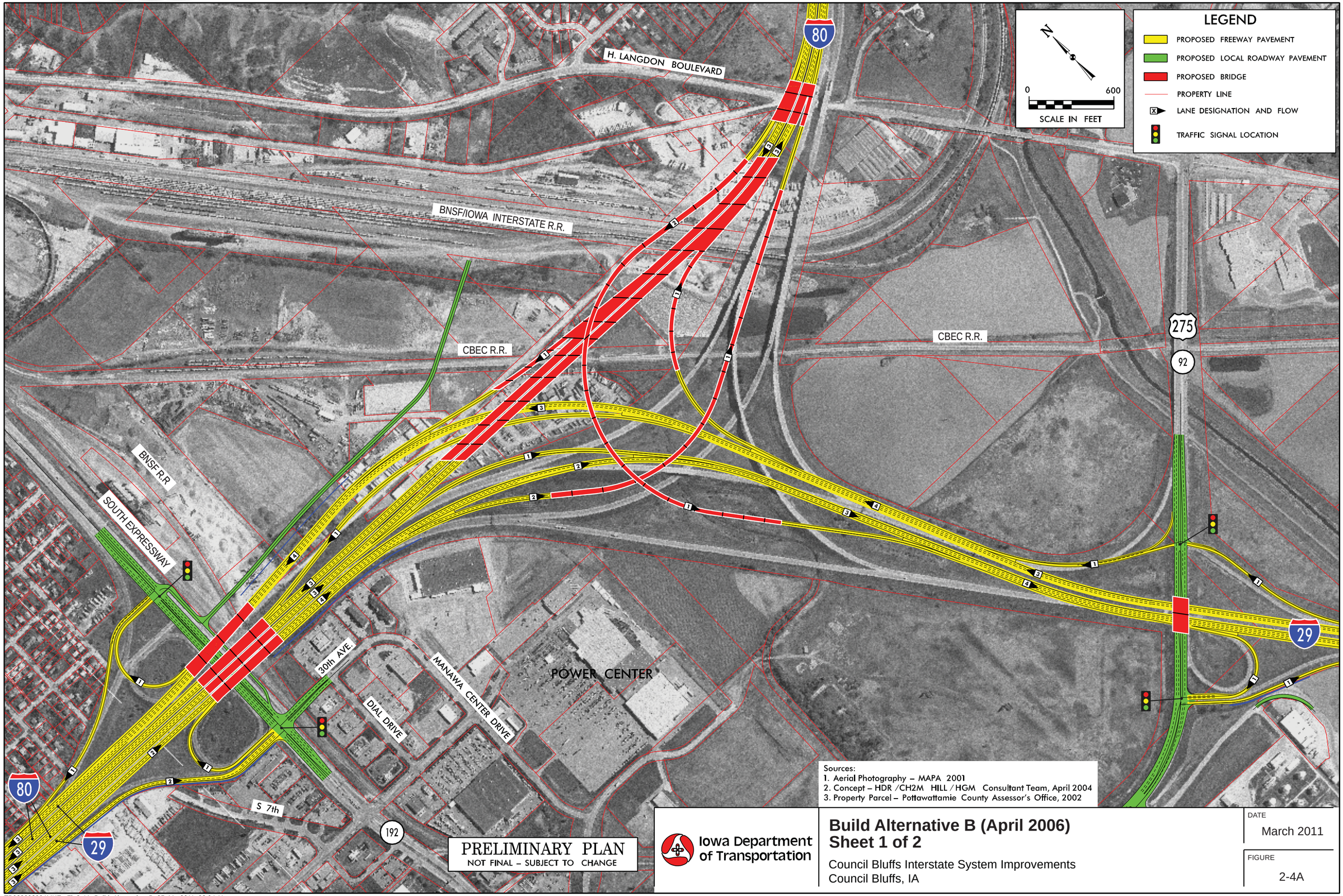
Build Alternative A (April 2006) Sheet 2 of 2

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-3B

TB022008004MKE Fig2-3B_Build_Alternative_A_05_Mar2011 03.04.11 cae



Sources:
1. Aerial Photography – MAPA 2001
2. Concept – HDR /CH2M HILL / HGM Consultant Team, April 2004
3. Property Parcel – Pottawattamie County Assessor's Office, 2002

Iowa Department of Transportation

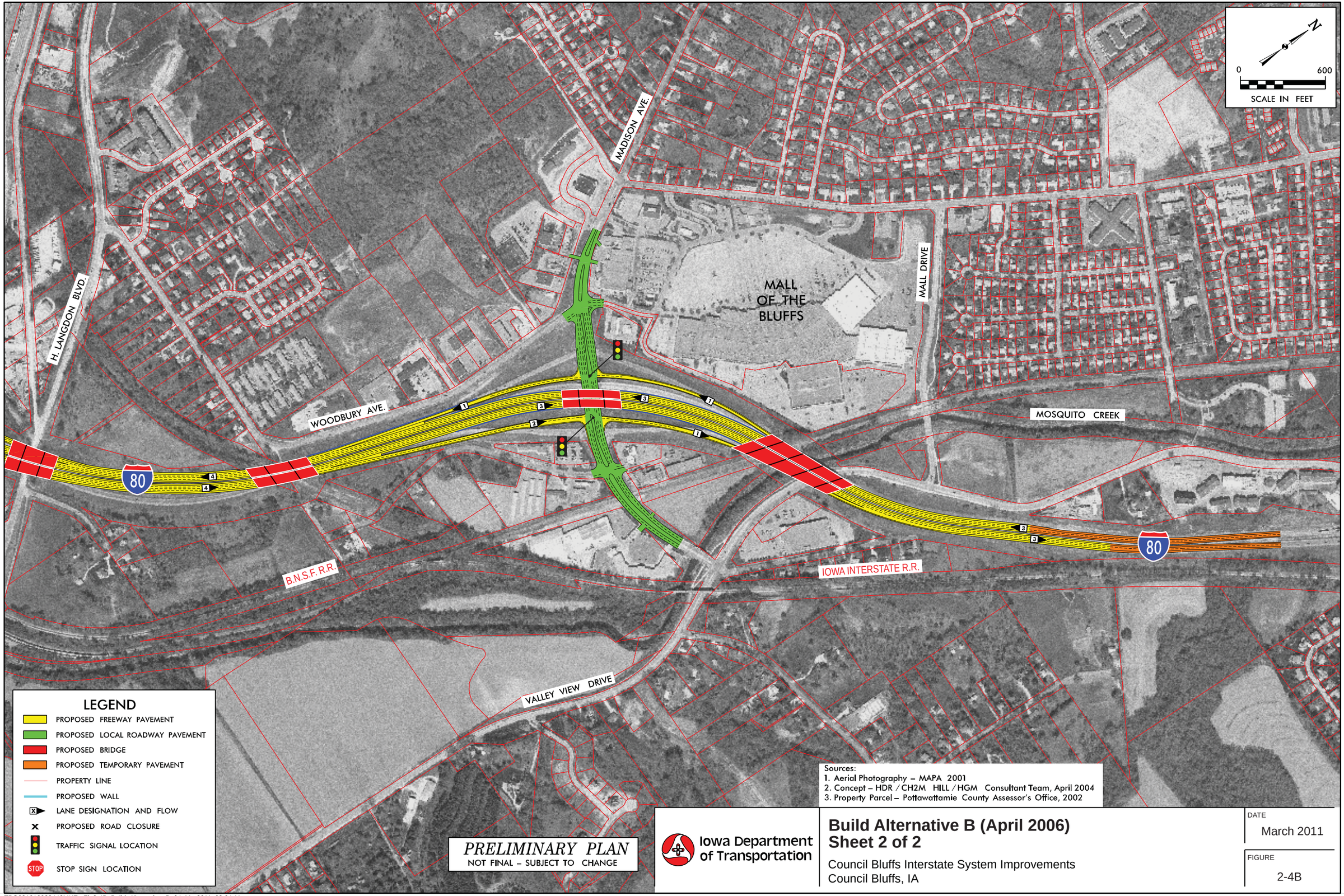
Build Alternative B (April 2006) Sheet 1 of 2

Council Bluffs Interstate System Improvements
Council Bluffs, IA

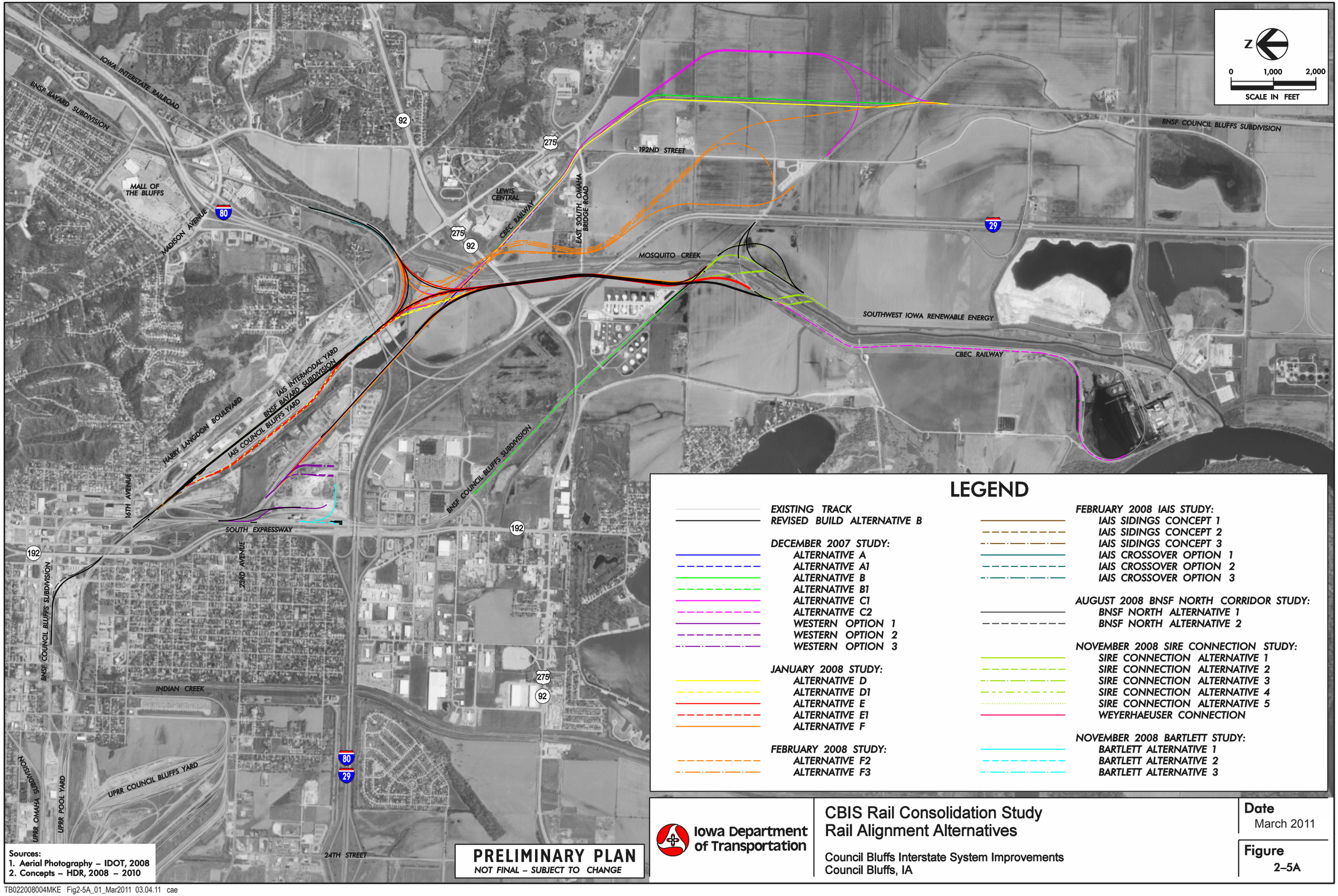
DATE
March 2011

FIGURE
2-4A

TB022008004MKE Fig2-4A_Build_Alternative_B_05_Mar2011 03.04.11 cae



TBG031910082448MKE Fig2-4B_Build_Alternative_B_04_Mar2011 03.04.11 cae



LEGEND

- EXISTING TRACK
- REVISED BUILD ALTERNATIVE B

DECEMBER 2007 STUDY:
- ALTERNATIVE A
- ALTERNATIVE A1
- ALTERNATIVE B
- ALTERNATIVE B1
- ALTERNATIVE C1
- ALTERNATIVE C2
- WESTERN OPTION 1
- WESTERN OPTION 2
- WESTERN OPTION 3

JANUARY 2008 STUDY:
- ALTERNATIVE D
- ALTERNATIVE D1
- ALTERNATIVE E
- ALTERNATIVE E1
- ALTERNATIVE F

FEBRUARY 2008 STUDY:
- ALTERNATIVE F2
- ALTERNATIVE F3

FEBRUARY 2008 IAIS STUDY:
- IAIS SIDINGS CONCEPT 1
- IAIS SIDINGS CONCEPT 2
- IAIS SIDINGS CONCEPT 3
- IAIS CROSSOVER OPTION 1
- IAIS CROSSOVER OPTION 2
- IAIS CROSSOVER OPTION 3

AUGUST 2008 BNSF NORTH CORRIDOR STUDY:
- BNSF NORTH ALTERNATIVE 1
- BNSF NORTH ALTERNATIVE 2

NOVEMBER 2008 SIRE CONNECTION STUDY:
- SIRE CONNECTION ALTERNATIVE 1
- SIRE CONNECTION ALTERNATIVE 2
- SIRE CONNECTION ALTERNATIVE 3
- SIRE CONNECTION ALTERNATIVE 4
- SIRE CONNECTION ALTERNATIVE 5
- WEYERHAEUSER CONNECTION

NOVEMBER 2008 BARTLETT STUDY:
- BARTLETT ALTERNATIVE 1
- BARTLETT ALTERNATIVE 2
- BARTLETT ALTERNATIVE 3

Sources:
1. Aerial Photography – IDOT, 2008
2. Concepts – HDR, 2008 – 2010

PRELIMINARY PLAN
NOT FINAL – SUBJECT TO CHANGE

Iowa Department of Transportation

CBIS Rail Consolidation Study
Rail Alignment Alternatives

Council Bluffs Interstate System Improvements
Council Bluffs, IA

Date
March 2011

Figure
2–5A

TB022008004MKE Fig2-5A_01_Mar2011 03.04.11 cae

IOWA INTERSTATE RAILROAD
BNSF BAYARD SUBDIVISION
MALL OF THE BLUFFS
MADISON AVENUE
80
92
275
LEWIS CENTRAL
CBEC RAILWAY
EAST SOUTH OMAHA BRIDGE ROAD
192ND STREET
BNSF COUNCIL BLUFFS SUBDIVISION
29
MOSQUITO CREEK
SOUTHWEST IOWA RENEWABLE ENERGY
CBEC RAILWAY
IAIS INTERMODAL YARD
BNSF BAYARD SUBDIVISION
HARRY LANGDON BOULEVARD
IAIS COUNCIL BLUFFS YARD
16TH AVENUE
SOUTH EXPRESSWAY
23RD AVENUE
BNSF COUNCIL BLUFFS SUBDIVISION
192
SEE INSET ON THIS SHEET
INDIAN CREEK

N
0 750 1,500
SCALE IN FEET

S. MAIN St
S. 16th St
S. 6th St
SOUTH EXPRESSWAY
12th AVE
S. 7th St
S. 8th St
14th AVE
S. 9th St
10th AVE

LEGEND

- EXISTING TRACK
- REVISED BUILD ALTERNATIVE B
- TRACK TO BE OUT-OF-SERVICE OR REMOVED
- PROPOSED AT–GRADE CROSSINGS
- REMOVED AT –GRADE CROSSINGS

PRELIMINARY PLAN
NOT FINAL – SUBJECT TO CHANGE

Sources:
1. Aerial Photography – IDOT, 2008
2. Concepts – HDR, 2008 – 2010

Iowa Department of Transportation

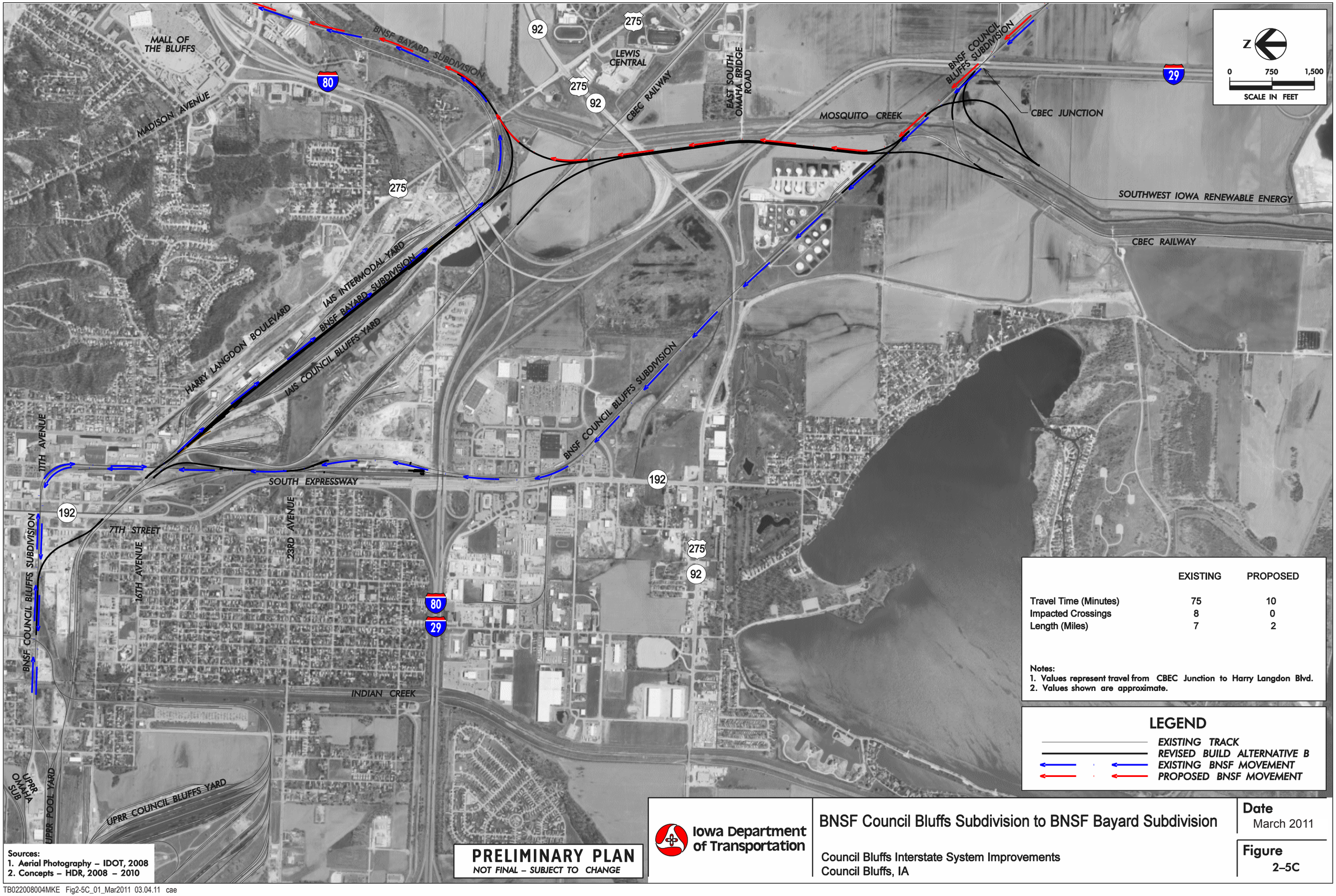
CBIS Rail Consolidation Study
Recommended Rail Alignment Alternative

Council Bluffs Interstate System Improvements
Council Bluffs, IA

Date
March 2011

Figure
2–5B

TB022008004MKE Fig2-5B_03_Mar2011 03.09.11 cae



	EXISTING	PROPOSED
Travel Time (Minutes)	75	10
Impacted Crossings	8	0
Length (Miles)	7	2

Notes:
1. Values represent travel from CBEC Junction to Harry Langdon Blvd.
2. Values shown are approximate.

LEGEND

- EXISTING TRACK
- REVISED BUILD ALTERNATIVE B
- EXISTING BNSF MOVEMENT
- PROPOSED BNSF MOVEMENT

Sources:
1. Aerial Photography – IDOT, 2008
2. Concepts – HDR, 2008 – 2010

PRELIMINARY PLAN
NOT FINAL – SUBJECT TO CHANGE

Iowa Department of Transportation

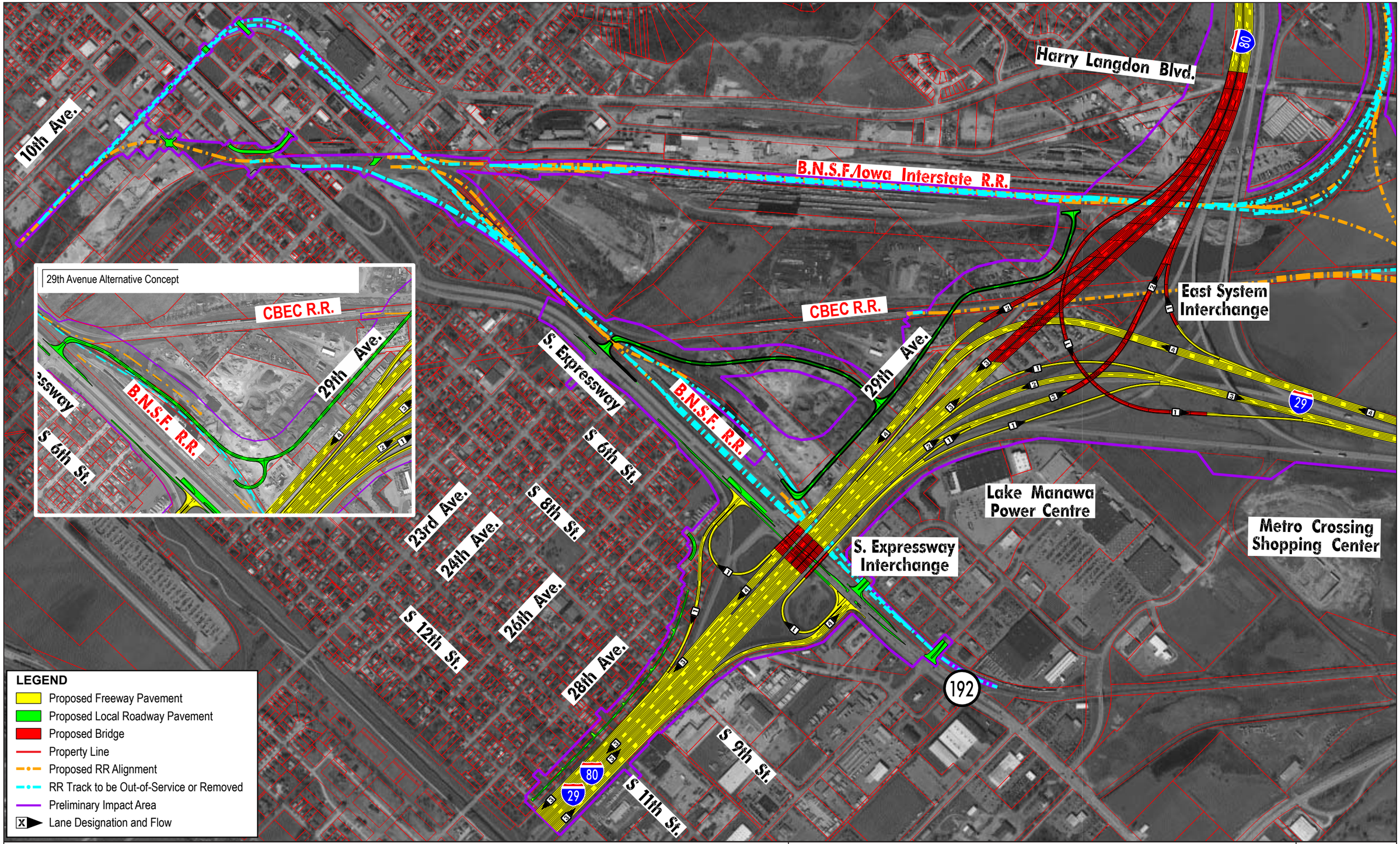
BNSF Council Bluffs Subdivision to BNSF Bayard Subdivision

Council Bluffs Interstate System Improvements
Council Bluffs, IA

Date
March 2011

Figure
2–5C

TB022008004MKE Fig2-5C_01_Mar2011 03.04.11 cae



Sources:
1. Aerial Photography – MAPA 2008
2. HDR/CH2M HILL Consultant Team, January, 2010
3. Property Parcel – Pottawattamie County Assessor's Office, 2009

Iowa Department of Transportation

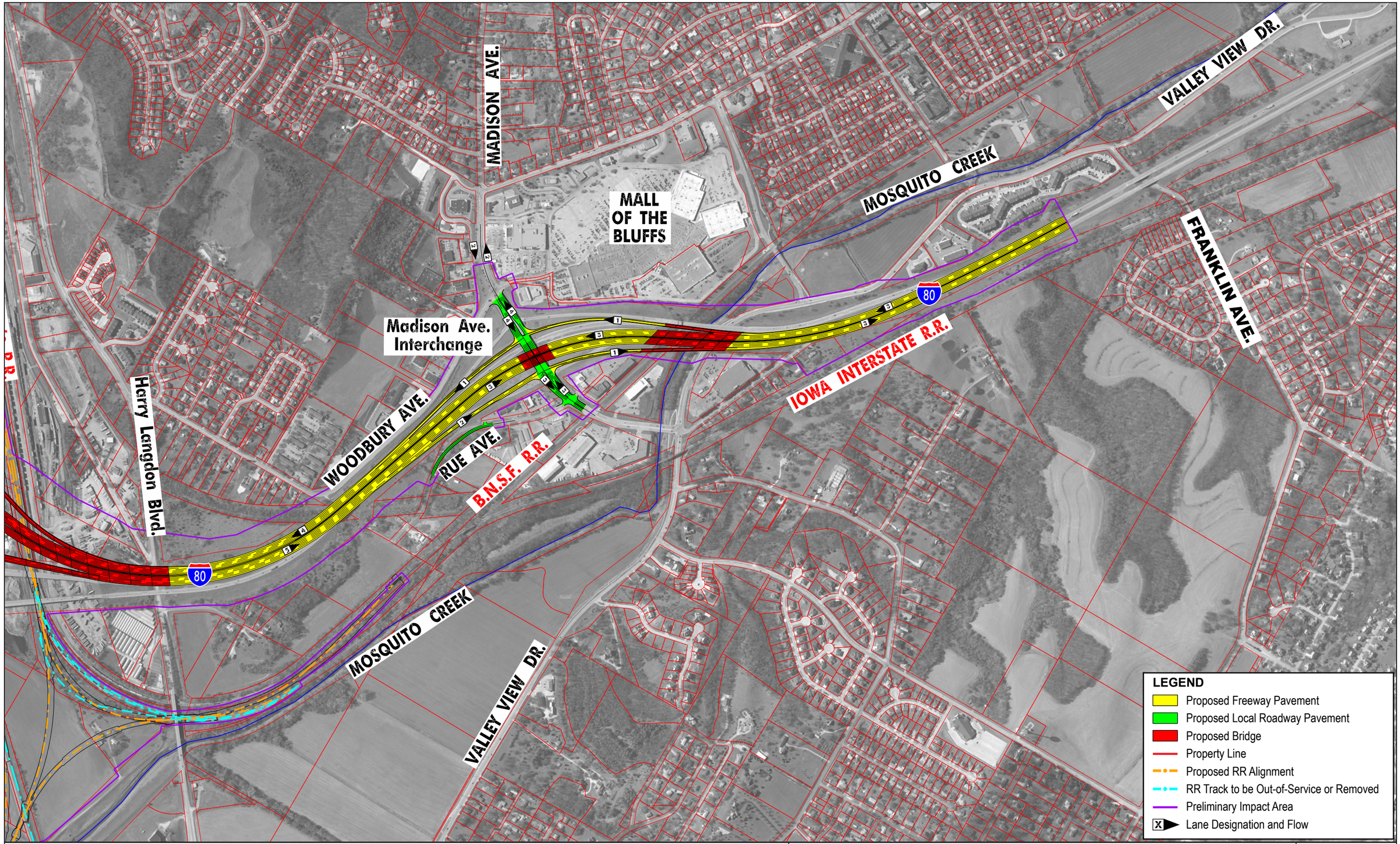
Revised Build Alternative B
Segment 3–East System Interchange (Not Final – Subject to Change)

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-6A

TB022008004MKE Fig2-6A_033110_09_Mar2011 03.09.11 cae



N

0 800

SCALE IN FEET

Sources:
1. Aerial Photography – MAPA 2008
2. HDR/CH2M HILL Consultant Team, January, 2010
3. Property Parcel – Pottawattamie County Assessor's Office, 2009

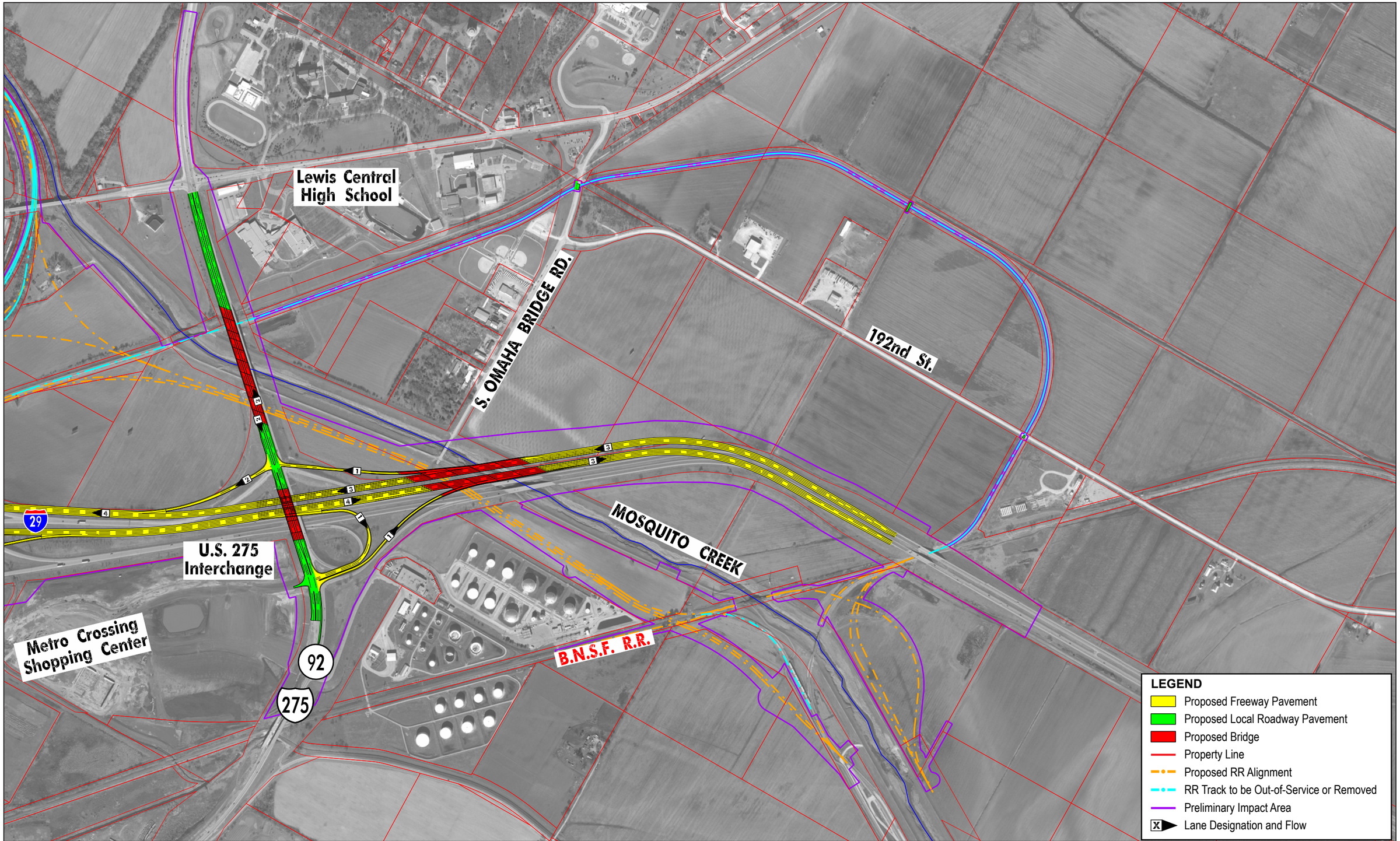
Iowa Department of Transportation

Revised Build Alternative B
Segment 3–Madison Ave Interchange (Not Final – Subject to Change)

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-6B



N

0 800
SCALE IN FEET

Sources:
1. Aerial Photography – MAPA 2008
2. HDR/CH2M HILL Consultant Team, January, 2010
3. Property Parcel – Pottawattamie County Assessor's Office, 2009

Iowa Department of Transportation

Revised Build Alternative B
Segment 3–U.S. 275 Interchange (Not Final – Subject to Change)

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-6C

HARRY LANGDON BLVD.

WOODBURY AVENUE

END PROPOSED IMPROVEMENTS

PROPOSED AT GRADE CROSSING REMOVAL

LEWIS CENTRAL

PROPOSED AT GRADE CROSSING REMOVAL

C.B.E.C.

PROPOSED TRACK REMOVAL

PROPOSED AT GRADE CROSSING REMOVAL

END PROPOSED IMPROVEMENTS

END PROPOSED IMPROVEMENTS

35th AVENUE

PROPOSED AT GRADE CROSSING REMOVAL

PROPOSED AT GRADE CROSSING REMOVAL

B.N.S.F.R.R.

35th AVENUE

SOUTH EXPRESSWAY

LEGEND

- PERMANENT ROADWAY PAVEMENT
- PERMANENT BRIDGE
- INTERIM FREEWAY PAVEMENT
- PREVIOUSLY CONSTRUCTED PAVEMENT / BRIDGE
- PROPOSED TRACK RELOCATION
- PROPERTY LINE
- PROPOSED WALL
- LANE DESIGNATION AND FLOW
- PROPOSED TRACK REMOVAL
- TRAFFIC SIGNAL LOCATION

N

0 600

SCALE IN FEET

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE

Iowa Department of Transportation

Segment 3
East System Interchange Phase 1 Improvements

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-7A

TB022008004MKE Fig2-7A_PIM_Geometric_Exhibits_Interim_1_B_05_Mar2011 03.04.11 cae

PROPOSED AT GRADE CROSSING REMOVAL

S. 8th STREET

12th AVENUE

PROPOSED TRACK REMOVAL

S. MAIN STREET

PROPOSED AT GRADE CROSSING REMOVAL

PROPOSED AT GRADE CROSSING REMOVAL

16th AVENUE

SOUTH EXPRESSWAY

MALL OF THE BLUFFS

HARRISON AVENUE

B.N.S.F.R.R.

IOWA INTERSTATE R.R.

Segment 4

Segment 3

NO CHANGE – EXISTING PAVEMENT REMAINS IN PLACE

INDIAN CREEK

20th AVENUE

20th AVENUE

WOODBURY AVENUE

MOSQUITO CREEK

PROPOSED AT GRADE CROSSING REMOVAL

PROPOSED AT GRADE CROSSING REMOVAL

HARRY LANGDON BLVD.

B.N.S.F.R.R.

N

0 600

SCALE IN FEET

LEGEND

- PERMANENT ROADWAY PAVEMENT
- PERMANENT BRIDGE
- INTERIM FREEWAY PAVEMENT
- PREVIOUSLY CONSTRUCTED PAVEMENT / BRIDGE
- PROPOSED TRACK RELOCATION
- PROPERTY LINE
- PROPOSED WALL
- LANE DESIGNATION AND FLOW
- PROPOSED TRACK REMOVAL
- TRAFFIC SIGNAL LOCATION

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE

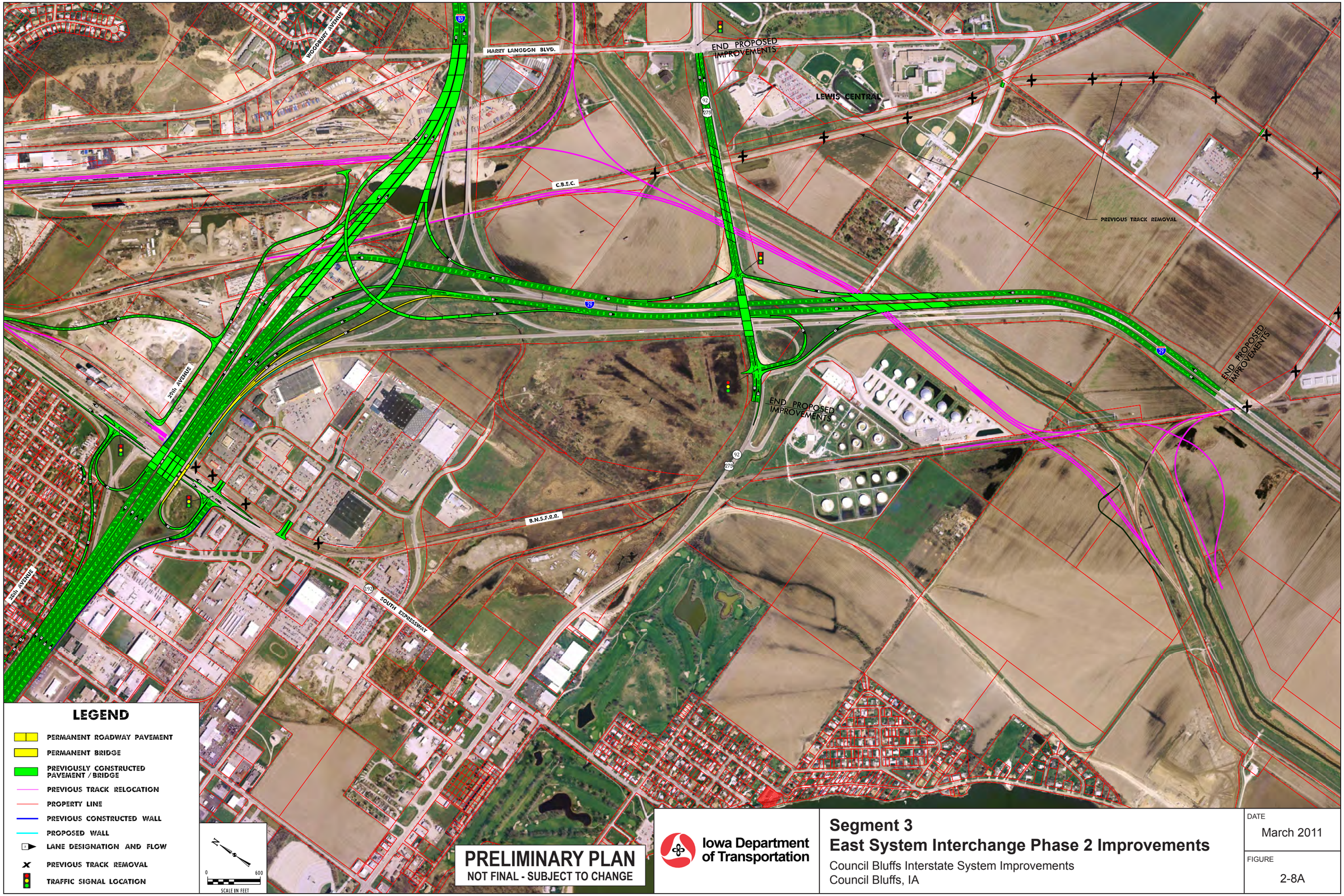
Iowa Department of Transportation

Segment 3
East System Interchange Phase 1 Improvements

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-7B



Iowa Department of Transportation

Segment 3
East System Interchange Phase 2 Improvements

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-8A

TB022008004MKE Fig2-8A_PIM_Geometric_Exhibits_Ultimate1_05_Mar2011 03.04.11 cae

9th AVENUE
S. 9th STREET
12th AVENUE
PROPOSED TRACK REMOVAL
S. MAIN STREET
16th AVENUE
SOUTH EXPRESSWAY
23rd AVENUE
INDIAN CREEK
26th AVENUE
29th AVENUE
Segment 2
Segment 3
MADISON AVENUE
MALL OF THE BLUFFS
B.N.S.F.R.R.
IOWA INTERSTATE R.R.
END PR IMPROVE
NUE AVENUE
WOODBURY AVENUE
MOSQUITO CREEK
HARRY LANGDON BLVD.

LEGEND

- PERMANENT ROADWAY PAVEMENT
- PERMANENT BRIDGE
- PREVIOUSLY CONSTRUCTED PAVEMENT / BRIDGE
- PREVIOUS TRACK RELOCATION
- PROPERTY LINE
- PREVIOUS CONSTRUCTED WALL
- PROPOSED WALL
- LANE DESIGNATION AND FLOW
- PREVIOUS TRACK REMOVAL
- TRAFFIC SIGNAL LOCATION

N

0 600

SCALE IN FEET

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE

Iowa Department of Transportation

Segment 3
East System Interchange Phase 2 Improvements

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
2-8B

TB022008004MKE Fig2-8B_PIM_Geometric_Ultimate2_05_Mar2011 03.04.11 cae

3. Affected Environment and Environmental Consequences 3-1
3.1 Introduction 3-1
3.2 Land Use 3-4
3.3 Acquisitions and Displacements/Relocations 3-9
3.4 Transportation 3-16
3.5 Safety 3-18
3.6 Wetlands and Waters of the U.S. 3-24
3.7 Floodplains 3-34
3.8 Water Quality 3-38
3.9 Threatened or Endangered Species 3-43
3.10 Cultural Resources 3-49
3.11 Noise 3-52
3.12 Regulated Materials 3-60
3.13 Pedestrian and Bicycle Paths 3-68
3.14 Section 4(f) Resources 3-70
3.15 Permits and Related Approvals 3-73
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Section 3
Affected Environment and Environmental Consequences

SECTION 3

Affected Environment and Environmental Consequences

3.1 Introduction

As noted in FHWA Technical Advisory T 6640.8A October 30, 1987, the primary purpose of an EA is to help the FHWA and Iowa DOT decide whether an EIS is needed. Therefore, the EA should address only resources or features that the FHWA and Iowa DOT decide have a likelihood of being significantly affected. The Tier 1 EIS evaluated potential impacts for implementing improvements to the overall CBIS system, and this EA section describes the human and natural resource features in Segment 3 with the greatest potential to experience significant impacts and identifies the resources that were eliminated from detailed analysis.

3.1.1 Resources Eliminated from Consideration

The following resources considered by Iowa DOT in NEPA documents did not undergo detailed evaluation for the Segment 3 Project:

- **Community Cohesion.** An Interstate highway system already exists in Segment 3. The communities originally severed by the initial Interstate highway would remain unchanged. The proposed railroad improvements would not adversely affect community cohesion. The Segment 3 Project would not isolate or change the boundaries of any neighborhoods.
- **Churches and Schools.** The Segment 3 Project, during construction or after completion, would not restrict access to schools or churches near the Interstate.
- **Economics.** Economic benefits would accrue from introducing construction to the region and, after completion of the Segment 3 Project, from the more efficient transportation system resulting from the project. Access along the CBIS and local railroad lines would be maintained during construction. As noted in Section 2, the Interim Project for Segment 3 would include parts of Segment 2 (which is addressed in design and NEPA as a separate project) because Segments 2 and 3 are closely tied together. The estimated cost range for the Interim Project for both Segments 2 and 3 is roughly $890 million to $975 million. Project expenditures would benefit the local economy.
- **Parkland and Recreational Areas.** There are no park or recreation facilities, other than the pedestrian and bicycle trails, within the project's preliminary impact area.
- **Construction and Emergency Routes.** The project would have no direct effect on emergency/health care services. Interstate traffic and public services would continue throughout construction. The project could result in improved emergency response times in the future.
- **Cemeteries.** No cemeteries are within the project's preliminary impact area.

- **Wild and Scenic Rivers.** No wild or scenic rivers are present in the study area. Mosquito Creek does not have a wild, scenic, or recreational designation.
- **Wildlife and Habitat.** The study area is predominantly urban. Negligible wildlife habitat exists along and adjacent to the existing right-of-way. Project impacts would be minimal compared to those of a new alignment.
- **Woodlands.** The study area is a predominantly urban environment, with limited vegetation along and adjacent to the existing right-of-way. Project impacts would be minimal compared to those of a new alignment. There are few woodlands in the project area. Woodlands tend to be found in relatively narrow corridors along railroad rights of way and occasionally at the edges of cropped fields. Because of their position in narrow corridors, project area woodlands do not serve as an important habitat area.
- **Farmlands.** The Farmland Protection Policy Act is intended to minimize the extent to which federal activities, such as highway projects, contribute to the unnecessary and irreversible conversion of agricultural land to nonagricultural uses. The agricultural land within Segment 3, which is located within the City and planning area of Council Bluffs, is not subject to the provisions of the Farmland Protection Policy Act. Agricultural land impacts are addressed in the Section 3.2 Land Use.
- **Air Quality.** The Council Bluffs area is in attainment with all criteria air pollutants. Traffic levels are expected to increase gradually with or without the project. No adverse impacts to air quality would occur as a result of the Segment 3 improvements. Improved efficiency of traffic flow, reduced vehicle idling at at-grade intersections, and more efficient train operations would result in fewer carbon, volatile organics, and nitrogen emissions. Carbon dioxide and nitrous oxide are primary greenhouse gases caused in part by fuel combustion; a decrease in those air emissions would reduce greenhouse gas emissions. The Project is not expected to result in any diversions of freight from truck to rail or vice versa, and therefore, there is not expected to be any diversion-related change in air pollutant emissions.
- **Mobile Source Air Toxics (MSAT).** This project would not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the No-Build Alternative. As such, FHWA has determined that this project would generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs.

  Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in VMT, FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.
- **Energy.** Energy would be consumed during construction, including processing of materials for use in construction. Because the Project is not expected to result in any diversions of freight from truck to rail or vice versa, there is not expected to be any diversion-related change in energy use. The capacity of Segment 3 would be expanded by

adding lanes, thus decreasing congestion and vehicle idling. In addition, the proposed railroad improvements would result in more efficient rail operations by substantially shortening the connection between the Council Bluffs Subdivision and Council Bluffs Bayard Subdivision and eliminating several at-grade railroad crossings, thus reducing the energy consumed by idling vehicles waiting for trains to cross roadways. Consequently, a slight reduction in vehicle fuel consumption would result in an energy savings.

- **Visual Resources and Aesthetics.** The study area is an urban environment dominated by residential and commercial land uses. Although the project would result in a highway wider than the existing Interstate highway facility and consolidated railroad tracks in some locations, it would have minimal effect on the existing viewshed.
- **Utilities.** Although many utilities are present in the project area, any disruptions would be temporary and short-term. Coordination would be performed during construction to minimize the effect of the Segment 3 Project.

3.1.2 Resources That Underwent Detailed Analysis

This section identifies the effects that the No-Build Alternative and Preferred Alternative (Revised Build Alternative B) would have on the resources listed below and measures to minimize or mitigate adverse effects. The discussion of existing conditions and impacts is arranged by the following topics: land use; acquisitions and residential, commercial and institutional displacements[1]; transportation; safety; wetlands (and other waters of the U.S.); floodplains; surface water and water quality; threatened or endangered species; cultural resources; noise; regulated materials; and Section 4(f) resources. This section also identifies permits and related approvals, and addresses potential cumulative impacts.

As noted in Section 1 (Section 1.2.2), Iowa DOT expanded the environmental study area for Segment 3 beyond the limits investigated in Tier 1 and the very early stages of Tier 2 to evaluate concepts that would eliminate railroad tracks in some areas and consolidate tracks in others. The proposed railroad improvements allow greater flexibility in designing the proposed Interstate improvements and would improve the efficiency of local roadway and railroad operations in Council Bluffs. To evaluate the project's potential impact on several resources in the expanded study area, Iowa DOT conducted additional field surveys in 2008. Table 3-1 lists the types of studies conducted and summarizes key findings. More information is provided under the resource discussions.

Each resource subsection evaluates the direct and indirect impacts of the Revised Build Alternative B and the impacts of the No-Build Alternative. The impacts of Revised Alternative B include those caused during construction of the roadway and railroad improvements and, where applicable, the operation of the proposed improvements. Direct impacts are caused by the proposed Segment 3 improvements and occur at the same time and place. An example is damage to a wetland due to the reconstruction of a bridge. Indirect impacts "are caused by an action and are later in time or further removed in distance but are still reasonably foreseeable" (Title 40, CFR, 1508.8).

[1] As agreed upon in Tier 1, the Tier 2 analysis would review the Tier 1 finding that the proposed improvements would not have disproportionately high and adverse impacts on an environmental justice population. The environmental justice analysis is part of Section 3.3, Acquisitions and Displacements/Relocations.

TABLE 3-1
2008 Railroad Corridor Consolidation Study Area Field Investigations

Fieldwork Completed	Key Findings
Wetlands	Sixteen wetlands totaling 37 acres were identified. About 4 acres were palustrine forested (PFO) and 33 acres palustrine emergent (PEM). Three nonwetland waters of the U.S. were also identified.
Threatened and endangered species	The intent of the survey was to identify the following species or their habitat: prairie bush clover (federal threatened, Iowa threatened); western prairie fringed orchid (federal threatened, Iowa threatened); bald eagle (no federal status under the Endangered Species Act, and recently delisted by Iowa); Indiana bat (federal endangered, Iowa endangered); and eastern massasauga rattlesnake (federal candidate species, Iowa endangered). None of the species were located. Two parts of the expanded study area were determined to provide potential marginal habitat for the eastern massasauga rattlesnake.
Historical architecture	Identified one property on the National Register of Historic Places (NRHP) (Chicago, Rock Island and Pacific Railroad passenger depot) and four eligible properties: Bartlett Grain elevator; Wabash freight house; East South Omaha Bridge Road bridge, and CB&Q (currently BNSF) Railroad plate girder bridge. The State Historic Preservation Office (SHPO) concurred with the eligibility recommendations.
Archaeology	No new sites were identified, and two previously recorded sites were updated.
Regulated materials	Thirty additional low risk sites with recognized environmental conditions, 5 moderate risk sites, and 4 high risk sites were identified. Low risk sites do not warrant further analysis.

Indirect impacts associated with highway improvements are those that affect the natural or built environment beyond the immediate footprint of the highway improvements. For example, a new interchange project could result in changes in land use, such as a new gas station, that would not have occurred without the interchange. Each resource subsection ends with a discussion of proposed measures to avoid, minimize, or mitigate adverse impacts, as applicable. The cumulative effects of Revised Build Alternative B and other reasonably foreseeable actions or projects within the general project area are discussed in a separate subsection. Table 6-1 in Section 6 lists the quantifiable impacts of the Segment 3 Project.

The area of potential impact used in the Tier 1 impact evaluations consisted of the combined right-of-way needs of the Construction Alternative and an offset to accommodate design refinements. As design continued during Tier 2, the Tier 1 area of potential impact was modified as necessary. At several locations, the area of potential impact was narrowed to avoid impacts; at others it was expanded to accommodate roadway design changes and proposed railroad improvements. This Tier 2 preliminary impact area is the primary basis for impact evaluations in this document (Figure 3-1). The preliminary impact area consists of the Build Alternative's right–of-way needs (roadway and railroad) and includes the area where construction could occur. In general, all resource features (wetlands, floodplains, residences, etc.) within the Segment 3 preliminary impact area were considered to be affected by Revised Build Alternative B. As the design process proceeds, the actual impact area may be refined and reduced in size resulting in fewer impacts.

3.2 Land Use

This section evaluates the potential of Revised Build Alternative B to change the study area's existing or proposed land use pattern, as well as the consistency of the Revised Build

Alternative B with Council Bluff's existing and future land use plans. The Tier 1 Draft EIS concluded that the Preferred Alternative would not affect land use in the study area because its footprint is largely within existing right-of-way. The Draft EIS noted that major development projects were being proposed and constructed with or without the Interstate improvements. Although the project's railroad improvements would require more new right-of-way than was anticipated during the Tier 1 process, the conclusion that land use would not change as a result of the project remains accurate. The railroad corridor consolidation improvements would not affect the pattern of development or the pace of development in the areas adjacent to new and consolidated tracks.

3.2.1 Existing Conditions

3.2.1.1 Land Use Plans

Chapter 4, Land Use and Development, of the *Council Bluffs Comprehensive Plan* (City of Council Bluffs 1994)[2] documents the city's current land use vision, as supplemented with amendments. The plan identifies eight goals to promote orderly and environmentally sound land use development. The Land Use and Development chapter identifies land use patterns that have developed since the adoption of the last comprehensive plan, and it examines future land use development opportunities within Council Bluffs. It identifies 10 subareas within and adjacent to Council Bluffs that have the greatest need and potential for development during the planning period.

In 2001, Council Bluffs and Pottawattamie County initiated a joint study, known as the *Two-Mile Limit Study*, to examine land use and infrastructure needs in an area 2 miles outside the corporate limits of Council Bluffs. The study found that the primary growth direction will extend east, and to a lesser extent, north of the corporate boundary. Within the identified growth areas, the study identified areas where growth is most likely, and areas where growth should be discouraged because of flooding, steep slopes, and unique habitat.

3.2.1.2 Existing Land Use

The Segment 3 study area contains a mix of primarily urban land uses. Residential, commercial, and industrial land uses predominate. According to the city's Comprehensive Plan, as of 1993, 29 percent of the land in Council Bluffs was devoted to residential development, 5 percent to commercial development, and 11 percent to industrial uses. With major roadways such as I-29, I-80, South Expressway, and U.S. 275/IA 92 within the study area, a large amount of land in Segment 3 is dedicated to highway right-of-way. The study area's major land uses are described below and shown in Figure 3-2.

Residential. The largest block of residential development immediately adjacent to the Interstate in Segment 3 is located north of the I-80/I-29 overlap section from Indian Creek to South Expressway. This area of largely single-family residences extends north to 16th Avenue, where it borders commercial/industrial uses. Smaller areas of single- and multi-family residential development are located north of the I-80/I-29 East System interchange. There is a block of multi-family and single-family residences along Woodbury Avenue north of I-80 and west of the Madison Avenue interchange. There is a small pocket

[2] Although originally published in 1994, the Comprehensive Plan has been amended with updates to various components. The most recent update is Amendment No. 13, The Fairmount Park Master Plan, approved in September 2007.

of single family residences along Valley View Lane (south of I-80 and east of the Madison Avenue interchange), a large residential area east of the segment of Valley View Drive south of I-80, and multi-family residential development at the east limit of the Segment 3 study area between Valley View Drive and I-80.

Commercial. Commercial land use is located in several areas within Segment 3. A large block of retail commercial development extends from the west edge of Segment 3, south of I-80/I-29, to South Expressway. This commercial area, known as Lake Manawa Power Centre, consists of restaurants, gas stations, and big box retail. Restaurants in Lake Manawa Power Centre include McDonald's, Cracker Barrel, and Applebee's. Big box retail in this area includes Best Buy, Gordmans, Toys R Us, Wal-Mart, Sam's Club, Menards, and Home Depot. Other service-related businesses include Bank of the West, Shell Gas, and Settle Inn Suites.

Construction of the Metro Crossing Shopping Center, located in the northwest quadrant of the U.S. 275/IA 92 interchange, began in 2006. The 85-acre development is expected to include 19 commercial lots and 3 outlets and to have more than 500,000 square feet of retail space (2008). Current retailers include Target, Kohl's, and Famous Footwear. A Buffalo Wild Wings and Olive Garden restaurants are open, and other restaurants and business retailers are under construction.

East of the I-80/I-29 East System interchange, there is commercial development along Madison Avenue north and south of I-80 and the Madison Avenue interchange. On the east side of Madison Avenue, north of I-80, is the 72-acre Mall of the Bluffs. This regional shopping center includes several large national chains, including Sears and Dillard's. Smaller scale commercial development in the area surrounding the Madison Avenue interchange includes fast food restaurants, service stations, a grocery store, motels and other retail and service-related businesses.

Industrial. Much of the industrial land between the CBEC Railway and Harry Langdon Boulevard (north of the I-80/I-29 East System interchange) is owned by construction companies and the railroads. The land owned by construction companies is used primarily to store heavy equipment and piles of asphalt and concrete. Several businesses are located along 29th Avenue between South Expressway and the CBEC rail grade, including Western Engineering, Landscape Materials, Lawrence Transportation Company, Whitehill Trailer Repair, Accutran Inc., and Arnold's Tool Inc. The British Petroleum (BP) Terminal is located in the southwestern quadrant of the U.S. 275/IA 92 interchange.

Open Space/Agricultural Land. Most of the undeveloped land (used primarily for crops) immediately adjacent to the Interstate is adjacent to I-29 from the northeastern quadrant of the U.S. 275/IA 92 interchange to the south I-29 terminus. There is also an area of cropland between Mosquito Creek and Valley View Drive east of Harry Langdon Boulevard.

3.2.1.3 Planned Land Use

As noted, the land use component of the *Council Bluffs Comprehensive Plan* discusses the city's future land use vision. The land use plan notes that Council Bluffs proposed a 1 percent annual growth goal from 2000 to 2004. To accommodate the population increase associated with the growth goal, the plan states that 240 to 300 acres of residential development and 90 to 110 acres of commercial development would be needed citywide. The plan notes that about 20 percent of the industrial land could be converted to other uses. Figure 3-3 shows the

Council Bluffs future land use plan and the generalized study area boundary. In Segment 3, the future plan calls for the following:

- Additional wholesale/light manufacturing development in the undeveloped land between the Lake Manawa Power Centre and Metro Crossing Shopping Center
- Additional multi-family residential development adjacent to I-80 east of Harry Langdon Boulevard and along the west side of Valley View Drive
- Additional single-family and multi-family residential development south of I-80 and east of the Madison Avenue interchange

Evidence of relatively recent development consistent with the future land use plan is the Metro Crossing development in the northwest quadrant of the U.S. 275/IA 92 interchange.

3.2.2 Impacts

3.2.2.1 No-Build Alternative

Although the No-Build Alternative in Segment 3 would involve construction of new segments of local roads and additional capacity on existing roads, it would not affect existing or future land use in Segment 3. As noted in the Tier 1 Draft EIS, all major development planned in the Council Bluffs metropolitan area, such as Metro Crossing, will occur regardless of the improvements to the CBIS. Under the No-Build Alternative, the existing railroad network would be maintained, thereby continuing the level of railroad impacts such as noise and travel interruptions at railroad crossings.

3.2.2.2 Revised Build Alternative B

Council Bluffs has had a land use plan in place since 1969. Each update of the plan, including the land use element of the *Council Bluffs Comprehensive Plan* (City of Council Bluffs 1994), was developed with the Interstate system in place. Because the proposed Segment 3 roadway improvements maintain the general alignment and access opportunities of the existing Interstate, and because the proposed railroad improvements are generally adjacent to other railroad facilities, Revised Build Alternative B would not change land use patterns that have developed around the system since the 1960s. In areas where new railroad tracks are proposed, the future land uses include heavy manufacturing and wholesale/light manufacturing, uses that would be well served by convenient access to rail service.

Revised Build Alternative B would acquire about 439 acres of new right-of-way from various land uses (202 acres from commercial/industrial uses, 32 from residential uses, and 205 from agricultural land) and convert them to transportation use. The impacts caused by the roadway improvements tend to be at the edges of various developments that would affect individual properties but not the overall land use of the larger surrounding area. Examples of this are Revised Build Alternative B impacts to the residential area west of the South Expressway and the commercial area east of South Expressway. In some locations, the railroad corridor consolidation severs properties. Revised Build Alternative B would reduce the number of residences at the southern edge of the neighborhood north of I-80/I-29, but the neighborhood, which extends from 28th Avenue north to 16th Avenue, will remain residential. Similarly, it would acquire businesses and commercial properties east of the South Expressway, but there will be opportunities to redevelop those commercial uses along the realigned 29th Avenue.

Large parts of the properties owned by the railroads and construction properties will be unaffected by the project, thus maintaining the commercial/industrial use of the area.

In areas where the railroad is taking a line out-of-service, such as the segment of the CBEC railroad between I-29 and IA 92, Council Bluffs may be able to use the right-of-way to enhance adjacent land uses. An example of this possibility is the Lewis Central High School property crossed by the CBEC Railroad. Placing the tracks out-of-service would allow for future removal of the tracks through the school property and eliminate the barrier between the high school and middle school east of the tracks and the baseball fields and bus barn west of the tracks. Conveyance of the railroad ROW to the City or Lewis Central School District would allow the school more efficient access throughout their property.

Access changes associated with the highway project may have indirect land use impacts. Creating new access to a highway through the development of a new interchange or intersection could spur new development and a change of land use. Similarly, removing access to a highway could result in out-of-distance travel and land use changes. Because Revised Build Alternative B would maintain access at the study area's four interchanges and not alter the local road system or its connection to the Interstate system, no indirect effects to land use are expected in Segment 3. Further limiting the project's potential for indirect land use effects is Council Bluffs' well-established land use planning process. The Council Bluffs *Comprehensive Plan* and the zoning, subdivision, building, and construction codes that regulate development in conformance with the plan severely limit the potential for indirect land use impacts. As evidenced by the future land use plan in Figure 3-3, land use changes in Segment 3 are driven not by changes to the road and railroad network but by a planning process intended to promote orderly development in Council Bluffs.

3.2.2.3 Joint Development

Joint development of proposed roadway right-of-way into a shared, multifunction facility would provide alternative uses of public land besides being a basic transportation route. The purpose of joint development is to restore or enhance the affected environment's social, economic, environmental, and visual values. Examples of alternative uses are utility uses, pedestrian/bicycle trails, parking facilities over or under roadways for access to trails, and denotation of historic or landmark features along trails that are unique to the area.

Revised Build Alternative B is designed to accommodate the future trails Council Bluffs is proposing along the east side of South Expressway and along existing BNSF right-of-way east of the BP Terminal; however, the trails will not be constructed as part of the Council Bluffs Interstate Improvement Project.

3.2.3 Avoidance, Minimization, and Mitigation

Revised Build Alternative B would not change the City's planned pattern of existing or future land use within Segment 3; it is consistent with the land use element of the Comprehensive Plan. The Iowa DOT has coordinated with representatives of Council Bluffs on development issues since the start of the Tier 1 Draft EIS.

Coordination will continue to ensure the compatibility of the Revised Build Alternative B design and proposed development adjacent to the Interstate in Segment 3. To minimize the impacts Revised Build Alternative B would have on land use and proposed development,

the Iowa DOT has established a corridor preservation zone to ensure proposed zoning changes and building permits are coordinated with the proposed Interstate system improvements. Iowa DOT's review process is intended to help the City manage proposed development and minimize the potential for conflict with future right-of-way requirements for roadways and railroads. No land use mitigation measures are needed for the CBIS Improvements Project in Segment 3.

3.3 Acquisitions and Displacements/Relocations

During the Tier 1 Draft EIS phase, the proposed CBIS improvements within Iowa were estimated to displace up to 287 single family residences and 61 businesses. During Tier 2, potential impacts to residential, commercial, industrial and institutional structures within the Segment 3 preliminary impact area were reevaluated using more refined design information. The current number of displacements and mitigation measures for displaced properties are discussed below. In addition, this section reevaluates the Tier 1 conclusion that the proposed Segment 3 improvements would not disproportionately affect populations protected by the Environmental Justice Executive Order (EO 12898).

3.3.1 Existing Conditions

The Segment 3 study area is a mix of residential, commercial and industrial uses (see Section 3.2). Figure 3-2 identifies the areas of residential, commercial, and industrial land uses within and near Segment 3. The largest block of residential development immediately adjacent to the Interstate system is located north of I-80/I-29 and west of South Expressway. The largest block of commercial and industrial development is located in the general area of the I-80/I-29 East System interchange east of South Expressway.

3.3.2 Impacts

3.3.2.1 No-Build Alternative

As noted in the Tier 1 Draft EIS, the No-Build Alternative would require new right-of-way to accommodate road widening and construction of new roads. The amount of new right-of-way required likely would be much less than required for the Build Alternative. Although other transportation improvement projects would occur under the No-Build Alternative (see Figure 2-2), it is likely that fewer displacements would occur than with Revised Build Alternative B. It is also expected that the No-Build Alternative would not cause disproportionately high and adverse impacts on environmental justice populations.

3.3.2.2 Revised Build Alternative B

Revised Build Alternative B would acquire about 439 acres of new right-of-way and affect residential, commercial and agricultural land. The potentially affected properties are shown in Figures 3-4A, 3-4B, and 3-4C. The project's residential and commercial impacts are described below.

Residential Impacts. Construction of Segment 3 would affect up to 72 residential properties. Of those, up to 61 properties would be displaced (5 of the displaced properties are duplexes, resulting in a total of 66 relocations) and right-of-way would be acquired from up to 11 other properties.

Most residential impacts will occur at the west end of the project in an area roughly bordered by 28th Avenue on the north, I-80/I-29 on the south, South Expressway on the east and 13th Street on the west; this is referred to as the South Expressway Neighborhood. In this neighborhood, Revised Build Alternative B would displace 48 single-family residences (8 of which are mobile homes) and 5 duplexes (10 residences), for a total of 58 residences; see Table 3-2 and Figure 3-4A. The 8 mobile homes that would be displaced are located in Bowes Trailer Court, which is located between South 6th Street and South Expressway. Ten mobile homes in Bowes Trailer Court would be unaffected by the proposed improvements. In addition to the 58 residences that would be displaced, strip acquisitions of new right-of-way would be acquired from 9 residences in the South Expressway Neighborhood. The project's remaining 8 residential displacements are single-family residences located along I-80 between Harry Langdon Boulevard and the east side of the Madison Avenue interchange (Figure 3-4B). Strip acquisitions would also be required from two residential properties near the displacements.

TABLE 3-2
Residential Impacts

Location	Displacements	Strip Acquisitions
South Expressway Neighborhood	40 SF residences 8 SF mobile homes 5 MF duplexes (10 residences)	9 SF residences
Harry Langdon Blvd/Highway 375 (north and south of I-80)	2 SF residences	
Woodbury Avenue (northwest of I-80)	1 SF residence	
Rue Street (southeast of I-80)	4 SF residences	
Valley View Lane (south of I-80)	1 SF residence	1 SF residence
Valley View Drive (north of I-80)	0 SF residence	1 MF property
Total	**66**	**11**

With the average household size in Council Bluffs estimated to be 3.03 people (U.S. Census Bureau 2000), roughly 176 people could be displaced by Revised Build Alternative B.

As design continues, the number of potentially affected residences reported above may be reduced. This is particularly true in the residential area north of I-80/I-29 and west of South Expressway. As can be seen in Figure 3-4A, there are numerous residential properties located immediately adjacent to the project's preliminary impact area. To date, the project team has been conservative in identifying potentially affected residences because of the preliminary nature of the design information being used. The next phase of design will provide Iowa DOT with information not currently available and result in a more accurate count of affected residences. Past experience on projects like this shows that as design detail increases, the preliminary impact area generally decreases thus reducing the number of properties Iowa DOT would have to acquire to construct the proposed improvements. In the next phase of design, Iowa DOT will continue to obtain input from potentially affected property owners before making final decisions about how the preferred alternative will affect residential properties.

Commercial Impacts. Impacts to retail commercial properties and businesses within industrial areas are both considered to be commercial impacts. Revised Build Alternative B would affect 50 commercial properties. Of those, 12 businesses would be displaced and strip acquisitions of new right-of-way would be required from 38 properties. Most of the 12 displaced businesses are located along 29th Avenue north of the I-80/I-29 East System interchange; see Table 3-3 and Figure 3-4A. Under Revised Build Alternative B, there would be 13 full parcel acquisitions of businesses. One parcel along 29th Avenue contains two businesses (Lawrence Transportation Company and American Trailer Sales), and CBEC Railway and Anderson Excavating each own two separate parcels along 29th Avenue that would be displaced by the Project. Consequently, there would be 12 business relocations as indicated in Table 3-3. Another displaced business property, Schildberg Construction Company, is used as a construction materials storage area and has no employees onsite.

TABLE 3-3
Commercial Displacements

Business	Location	Description	Range of Employees
Lawrence Transportation Company	260 29th Ave.	Long distance transport; trucking	1 to 5
American Trailer Sales	260 29th Ave.	Semi trailer sales and service	5 to 10
Arnolds Tool Inc/ West Iowa Tools	257 29th Ave.	Tool Supply	20 to 50
Whitehill Trailer Repair	251 29th Ave.	Trailer repair	1 to 5
Accutran Inc.	247 29th Ave.	Long distance transport; trucking, vans	5 to 10
Lenders and Insurers Auto Auction and Marketing Service	61 Old Lincoln Hwy	Salvage yard	1 to 5
CBEC Railway	2 properties at the east end of 29th Ave.	Railway	1 to 5 for the property north of 29th Ave. No employees on the property south of 29th Ave.
Anderson Excavating	2 properties north of the East System Interchange	Construction ; Excavation contractor	1 to 5 at one property. No employees at the other
Business Name Unknown: Property Owner: Wendell Stephens	1104 S 8th St.	Sign Shop/Garage	1 to 5
Utility Construction Inc.	1124 S 8th St.	Construction	1 to 5
Rail Container Corp	2721 South Ave.	Trailer repair facility	5 to 10
Schildberg Construction Co.	Within East System Interchange	Construction materials storage yard	0

Most of the commercial properties from which strip acquisitions are required are south of I-80/I-29 in the Lake Manawa Power Centre and in the general area of the Madison Avenue interchange (Figures 3-4A, 3-4B, and 3-4C).

Revised Alternative B would also acquire one undeveloped property along the north side of Rue Street near the Madison Avenue interchange immediately east of Harry Langdon Boulevard and acquire a strip of an undeveloped property located west of the Madison Avenue interchange and east of Harry Langdon Boulevard (Figure 3-4B). A strip along the north edge of the Lewis Central High School (currently unused for recreational or other school activities) would be required by improvements to U.S. 275 (Figure 3-4C).

Agricultural Impacts. Revised Build Alternative B would affect 17 agricultural properties adjacent to the U.S. 275/IA 92 interchange and I-29 near the south terminus of the Project (Figures 3-4B and 3-4C). Strip acquisitions of new right-of-way are required from fourteen properties, and three agricultural properties in the area of the U.S. 275/IA 92 interchange would be acquired.

Indirect impacts from Revised Build Alternative B are not expected to displace residential or commercial properties or require additional right-of-way from them. As noted in the Land Use discussion, because Revised Build Alternative B maintains access to the Interstate system and land use regulations are in place to guide new development, there is little possibility that new development spurred solely by the proposed improvements would adversely affect residential or commercial properties.

Although Revised Build Alternative B would displace 66 residences and 12 commercial properties, there are processes in place to assist displaced residents and business owners (see Section 3.3.3). It should be noted that the impact to the CBEC Railway property is part of the project's railroad corridor consolidation that the railroads had input in developing. As a result, no significant adverse impacts would result from the commercial and residential displacements of Revised Build Alternative B.

3.3.3 Avoidance, Minimization, and Mitigation

During the Tier 2 design process, several measures were implemented to minimize impacts to commercial and residential properties. The segment of I-80 between the I-80/I-29 East System interchange and the Madison Avenue interchange and east of the interchange, was designed to stay on existing alignment as much as possible to minimize impacts to adjacent commercial and residential development. In addition, retaining walls are proposed at various locations east of Harry Langdon Boulevard to minimize impacts to commercial development along Woodbury Avenue and within the Madison Avenue interchange, and to minimize impacts to residential development along Valley View Drive north of I-80.

A retaining wall is proposed on the south side of I-80/I-29 between Indian Creek and South Expressway to minimize commercial impacts. East of South Expressway another section of retaining wall is proposed to minimize commercial impacts to the Lake Manawa Power Centre. In addition, the U.S. 275/IA 92 interchange was designed to avoid impacts to the BP Terminal and relocated 29th Avenue was designed to minimize impacts to the commercial area east of South Expressway.

3.3.3.1 Right-of-Way Acquisition Process

The Iowa DOT offers a relocation assistance program to individuals, families, business owners, farm operators, and nonprofit organizations that are partially or totally displaced by a state highway project. The Uniform Relocation Assistance and Real Property

Acquisition Policies Act of 1970, as amended, provides for payment of just compensation for property acquired for a project using federal aid. In addition, Iowa Code 316, the "Relocation Assistance Law," establishes a uniform policy for the fair and equitable treatment of displaced persons that serves to minimize the hardships of relocation.

3.3.3.2 Replacement Housing / Commercial Properties

It is the policy of the state of Iowa that displaced individuals receive fair and equitable treatment and do not suffer disproportionately from highway programs intended for the public as a whole. Persons required to move as a result of a highway construction project, whether owners or tenants, are eligible for relocation assistance advisory services and for moving payments. Replacement housing payments and reimbursement for certain expenses incurred in purchasing replacement housing (such as increased interest costs caused by higher mortgage interest rates) would be available on a case-by-case basis depending on eligibility. The state will provide comparable (equal or better) housing for those to be relocated. Relocation assistance agents are employed by the Iowa DOT to explain all available options. Displaced businesses will be eligible for a moving payment and may qualify for reestablishment expenses. Iowa DOT follows a similar process for commercial/industrial property displacements.

Difficulties in locating replacement housing should be minimized by incorporating additional lead time into the relocation planning process. Complicated relocation problems that may arise will be addressed by the state's commitment to the provisions of 49 CFR 24.404 (Replacement Housing of Last Resort).

Revised Build Alternative B would displace 66 residences, as indicated in Table 3-2. A review of houses for sale in the *Daily Nonpareil* was conducted from June through August 2010 to determine the availability of replacement housing in the Council Bluffs area. Using information from Pottawattamie County, the number of bedrooms and assessed value of the displaced residences were compared to the characteristics of houses for sale in the *Daily Nonpareil.* The discrepancy in comparing assessed values of displaced residences and market values of houses for sale is acknowledged, but such a comparison is suitable for making judgments on the availability of replacement housing. As expected, the availability of replacement housing varied by the characteristics of the residence to be displaced. For most displaced residences, there were 10 to 20 houses for sale during the analysis period with similar characteristics for each residence needing relocation. The exception to this trend was properties with large lots and three or four bedrooms. There were three or four residences available for each potentially displaced residence with those characteristics during the analysis period. Although no mobile homes were advertised for sale, the generally high availability of residences suggests that it would not be difficult relocating the affected mobile home owners. In addition, the Tier 1 Draft EIS reported that the relocation analysis conducted as part of the Avenue G Viaduct project determined that the demand for relocation into homes of any price range is about 20 percent of available supply. The Draft EIS concluded that considering the housing vacancy rate (6 percent in 2000), the number of available housing units in Council Bluffs, and the length of time it would take to complete the CBIS improvements, that there would be sufficient housing available for relocation within or near the study area.

Revised Build Alternative B would displace 12 businesses, as indicated in Table 3-3. A review of commercial and industrial buildings and sites for sale on the Council Bluffs Chamber of

Commerce website was conducted in November 2010 to determine the availability of replacement buildings and undeveloped industrial sites in the Council Bluffs area. The website identified five commercial buildings for sale ranging from 3,200 square feet to 97,000 square feet, and 10 industrial buildings ranging in size from 7,500 square feet to 160,000 square feet. There were 11 undeveloped industrial lots available between 1.2 and 25 acres in size.

As the project construction and real estate acquisition dates become more certain, the Iowa DOT will reassess housing and commercial/industrial building availability as part of a detailed Acquisition Stage Relocation Plan. Preliminary investigations for purposes of the CBIS Improvements Project indicate there would likely be an adequate supply of comparable replacement dwellings and commercial/industrial buildings and undeveloped sites. Because of the long-term construction schedule for parts of Segment 3, Iowa DOT may respond to requests for early acquisition.

3.3.4 Environmental Justice Considerations

3.3.4.1 Background

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 11, 1994), requires all federal agencies to make environmental justice part of their mission by identifying and addressing environmental justice impacts (EO Section 1-101). According to Section 2-2 (Federal Agency Responsibility for Federal Programs) of the EO:

> Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

The EO also requires that representatives from low-income or minority populations that could be affected by the project be meaningfully engaged in the impact assessment and public involvement process. Section 3-301(c) of the EO states that federal agencies shall provide environmental justice populations "the opportunity to comment on the development and design of research strategies undertaken pursuant to this order." Section 5-5(c) notes that federal agencies should "work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public."

The U.S. Department of Transportation (DOT) published a Final DOT Order (April 1997) for its operating administrations, including FHWA, establishing procedures for use in complying with EO 12898. FHWA's Environmental Justice Order 6640.23 was signed on December 2, 1998.

The FHWA Order defines a minority as a person who is black, Hispanic, Asian American, or American Indian/Alaskan Native. Minority populations are defined as "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy or activity." The Order defines a person of low income as one whose

median household income is at or below the Department of Health and Human Services poverty guidelines. A low-income population is defined as, "any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy or activity." The 2009 poverty guideline for a family or household of four is $22,050.

In the Tier 1 Draft EIS, an environmental justice analysis was completed to determine whether the proposed project would exert disproportionately high or adverse impacts upon minority or low-income populations, and to assess if such impacts would be disproportionate relative to the total population. See Section 4.1.5 of the Draft EIS for more information. Under environmental justice guidance, if adverse impacts are borne disproportionately by low-income or minority populations, an analysis must examine mitigation measures, offsetting benefits, and impacts of other system elements in accordance with FHWA Order 6640.23, *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (USDOT and FHWA 1998). For the Tier 1 Draft EIS, the environmental justice study area included all census block and block groups within and adjacent to the area of potential impact.

Using information about the location and number of potential residential displacements, the focus of the Tier 2 environmental justice analyses was to evaluate the demographic and income data of the areas with the greatest number of residential displacements to determine whether the Tier 1 conclusions were still valid.

3.3.4.2 Potential Environmental Justice Populations

The greatest potential to adversely affect minority or low-income populations is in the residential area north of I-80/I-29 and west of South Expressway. Fifty-eight of the project's 66 residential displacements would occur in that neighborhood. The neighborhood is within Census Tract 308, which is bordered by 9th Avenue to the north, South Expressway to the east, I-29/80 to the south and Indian Creek to the west. Census Tract 308 includes three block groups (1 to 3). Block Group 3 is at the southern end of Census Tract 308 and includes eight blocks which contain all of the 58 potential residential displacements in this part of the study area (Figure 3-5). Demographic data for Block Group 3 are found in Table 3-4.

As noted in Table 3-4 there is a very small minority population in the 8 Census blocks where the 58 potential residential displacements would occur. In fact, the percentage of minority population living in the area that would experience the residential displacements is, with the exception of block 3039, lower than the citywide minority percentage reported in the Tier 1 Draft EIS (5 percent).

The 1999 median household income for Block Group 3 was $42,266, and 8.1 percent of the block group had an income level below poverty. This compares to the City of Council Bluffs median income of $36,221, and 8.2 percent of the population below the poverty level.

The proposed CBIS improvements will not cause disproportionately high and adverse effects on any minority or low-income populations per E.O. 12898 regarding environmental justice, because the neighborhood with the majority of relocations has a lower minority percentage than the citywide percentage and a higher median income than the citywide average.

TABLE 3-4
Census Tract 308 Block Group 3 Demographic Data

Block	Total Population	White (not Hispanic)	%	American Indian & Alaska Native	%	2 or More Races	%	Hispanic or Latino	%
3017	23	23	100	0	0	0	0	0	0
3018	141	139	98.6	0	0	0	0	2	1.4
3028	15	15	100	0	0	0	0	0	0
3029	27	26	96.3	0	0	0	0	1	3.7
3030	45	44	97.8	1	2.2	0	0	0	0
3036	50	50	100	0	0	0	0	0	0
3039	60	56	93.3	0	0	2	3.3	2	3.3
3040	16	16	100	0	0	0	0	0	0
Total	**377**	**369**	**97.9**	**1**	**0.3**	**2**	**0.5**	**5**	**1.3**

Source: U.S. Census Bureau. 2000.

3.4 Transportation

This section evaluates the potential of Revised Build Alternative B to affect all modes of transportation in the study area, with a particular emphasis on vehicular and rail transportation.

3.4.1 Existing Conditions

I-80 and I-29 and interconnected state and local roadways provide the primary source of travel within the corridor. Over 90 percent of Council Bluffs residents use the Interstate system and local road network to commute to work. Much of the rest of the transportation network depends directly or indirectly on the roadway system. The city's bus service uses the local road network, and travelers using the regional airports depend on I-29 and I-80 to access those facilities. Barge and rail freight systems also depend on connectivity with the Segment 3 Interstate system for distribution of goods.

As described in Section 1 of the Tier 1 DEIS, the Interstate system in Council Bluffs was constructed in the late 1960s and early 1970s. Although there have been resurfacing and pavement replacement projects since construction, repairs to structures, and other regular maintenance activities, the Interstate system is, in general, reaching the end of its service life. At the same time, the traffic demand the system serves is predicted to increase substantially.

The rail system in Segment 3 is extensive and, while dominated by freight carriers such as the BNSF and Iowa Interstate, there is also passenger rail provided by Amtrak in Omaha. The local road, Interstate system, and development in Segment 3 and throughout the larger CBIS study area have developed around the railroad tracks and right-of-way. The interplay between railroad tracks, the local roadway and Interstate network, and local development is clearly evident in Segment 3. As an example, the BNSF runs between the South Expressway and the Lake Manawa Power Centre and continues north to an industrial area north of I-80/I-29 East System interchange where a dominant land use is a rail yard. Adjacent to the

South Expressway, the rail line has intersections with the local road system serving the Lake Manawa Power Centre, and its presence within the South Expressway interchange influences the height of the interchange structures.

Train traffic at the selected at-grade crossings causes approximately 224 hours of daily vehicular delay under existing conditions (Table 3-5).

The CBIS project in Segment 3 provides Iowa DOT, the City of Council Bluffs, and the MAPA the opportunity to evaluate the potential for railroad modification or relocation projects in conjunction with the proposed CBIS improvements that would benefit all parties.

3.4.2 Impacts

3.4.2.1 No-Build Alternative

As noted in Section 2, the No-Build Alternative includes committed capacity and access improvements in the Segment 3 study area, as well as all planned off-system improvements identified in the *Metropolitan Area Planning Agency's 2030 LRTP*. Figure 2-2 identifies the off-system improvements that are part of the No-Build Alternative for Segment 3 of the CBIS project. The No-Build Alternative includes short-term restoration work and ongoing maintenance to ensure continued bridge and roadway pavement integrity along the Interstate. The design of the Interstate system—location, geometric features, and current overall capacity—would remain largely unchanged, but minor operational improvements could occur. Generally, the capacity and safety issues associated with the Interstate system would not be addressed, and roadway operations and conditions would continue to deteriorate. The deterioration of operations on I-80 and I-29 would have adverse consequences for the wide range of its users, including most notably commuter and commercial users.

Because the No-Build Alternative does not include the railroad corridor consolidation improvements, it would not increase the efficiency of rail operations in Council Bluffs. Rail and vehicle traffic is projected to increase in the future and would result in additional conflicts and delays. Train traffic at the crossings within the potential impact area would cause approximately 344 hours of daily vehicular delay under the No-Build Alternative conditions (Table 3-5).

3.4.2.2 Build Alternative

For each railroad, all rail construction would be single track. However, multiple tracks from different railroads would exist in several locations. By 2030, approximately 21 one-way train operations are projected to occur each day along the rail lines, 2 additional operations would occur 5 days per week, and 1 operation would only occur approximately twice a month. No diversion of truck to rail, or rail to truck traffic is anticipated to occur. Approximately 8.5 miles of new track would be constructed and approximately 12.5 miles of track would be placed out-of-service (with removal proposed at some locations). For out-of-service rail, the plan is to convey the existing rail property to a governmental agency, such as the City of Council Bluffs. Rail would be removed east of South Expressway from the Lake Manawa Power Centre to near 10th Avenue and in a few other locations. With two exceptions, there are no plans to remove track or disturb the grade of at-grade rail crossing locations. An existing connection track would be removed at the 6th Street and 16th Avenue crossings. Active rail lines would still remain at these locations and require modifications to the existing crossing signals.

Revised Build Alternative B would correct a range of current deficiencies on I-80/I-29 including horizontal and vertical alignment, lane and shoulder width, ramp spacing, weaving lengths, lane balance and continuity, and additional capacity among others. Addressing those deficiencies would improve the safety and travel efficiency on the Council Bluffs Interstate system for all users. Reduced travel time and improved safety would have economic benefits for individual users and businesses, particularly businesses that rely on just-in-time delivery as part of their business model.

In addition to providing benefits to vehicular traffic, Revised Build Alternative B would improve the efficiency of railroad operations in Council Bluffs by placing tracks out-of-service in some areas and consolidating tracks in other areas. As noted, 16 at-grade crossings would be closed, and three would be created with Revised Build Alternative B. Table 3-5 shows the estimated change in traffic levels and reduced delays as a result of implementing Revised Build Alternative B. The delay at existing and proposed crossings totals 199 hours of daily vehicular delay resulting in a reduction of 42 percent compared to the No-Build Alternative and an 11 percent reduction compared to existing conditions (Table 3-5).

More specifically, railroad corridor consolidation would have the following benefits:

- Improves operational efficiency for train movements by providing a new combined railroad corridor that fully bypasses the Council Bluffs downtown area. Current operations involve slow-moving trains east of South Expressway and in and out of Downtown Council Bluffs, which block at-grade rail crossings. Reduced delays for vehicular and train traffic in eastern Council Bluffs were quantified and estimated to result in savings of $10.1 million (in 2010 dollars) over 20 years from 2010 to 2030.
- Eliminates a railroad corridor that divides Lewis Central High School east of the tracks from the school's baseball fields and bus barn west of the tracks. Placing the railroad tracks out-of-service would eliminate the delays for pedestrians traveling between the school and athletic fields, and for the school's bus routes, and would allow future removal of the tracks and potential consolidation of the campus.
- Greatly reduces roadway / railroad conflicts by consolidating railroad corridors and eliminating numerous at-grade rail crossings. Based on the current design, a net reduction of 13 crossings would occur, including crossings at 16th, 29th, 30th, and 32nd Avenues, and East South Omaha Bridge Road.
- Provides future expandability for Mid-American Energy's CBEC Railroad without impacts to at-grade crossings.
- Allows for service to the SIRE ethanol plant without requiring train movements past Lewis Central High School and Lewis Central Middle School.
- Improves operations at South Expressway interchange ramp terminal intersections.

3.5 Safety

This section addresses the potential impact of Revised Build Alternative B on safety within the study area. Safety was identified as a need during the Tier 1 Draft EIS, and was addressed in the document in several subsections, focusing on potential roadway safety issues.

TABLE 3-5
Existing, 2030 No-Build, and Build Vehicular Queues, Delay, and Levels of Service

At-Grade Crossing	2010 Existing				2030 No-Build				2030 Build			
	Vehicle Queue (Number of Vehicles)	Average Delay for All Vehicles (Minutes per Vehicle)	Level of Service	Total Daily Delay to Vehicles Delayed by Trains (Minutes)	Vehicle Queue (Number of Vehicles)	Average Delay for all Vehicles (Minutes per Vehicle)	Level of Service	Total Daily Delay to Vehicles Delayed by Trains (Minutes)	Vehicle Queue (Number of Vehicles)	Average Delay for all Vehicles (Minutes per Vehicle)	Level of Service	Total Daily Delay to Vehicles Delayed by Trains Minutes)
Existing Crossing												
Main Street	6	0.28	B	250	8	0.34	C	379	Closed crossing			
6th Street	7	0.26	B	264	8	0.33	B	396	Closed crossing			
7th Street	4	0.25	B	150	5	0.32	B	221	Closed crossing			
8th Street	24	0.24	B	849	27	0.30	B	1,239	Closed crossing			
7th Street (near 14th Avenue)	5	0.09	A	115	6	0.23	B	239	Closed crossing			
6th Street (near 15th Avenue)	7	0.21	B	348	11	0.40	C	743	11	0.32	B	1,012
16th Avenue (Main Street)	44	0.34	C	3,924	60	0.57	C	6,993	60	0.41	C	8,853
16th Avenue (east of Main Street)	38	0.27	B	1,444	44	0.33	C	2,071	Closed crossing			
29th Avenue (Bartlett Tracks)	34	0.08	A	211	36	0.08	A	220	Closed crossing			
29th Avenue (BNSF Mainline)	15	0.18	B	440	15	0.22	B	583	Closed crossing			
29th Avenue (CBEC Mainline)	4	0.09	A	53	5	0.12	A	74	Closed crossing			
30th Avenue	31	0.24	B	2,736	35	0.28	B	3,798	Closed crossing			
32nd Avenue	29	0.24	B	2,547	32	0.28	B	3,543	Closed crossing			
E South Omaha Bridge Road	5	0.09	A	62	7	0.12	A	98	Closed crossing			
192nd Street	2	0.09	A	26	2	0.12	A	37	Closed crossing			
W Levee Bridge	0	0.00	A	0	0	0.00	A	0	Closed crossing			
E Levee Bridge	0	0.00	A	0	0	0.00	A	0	Closed crossing			
Farmer's Crossing (east of 192nd Street)	0	0.00	A	0	0	0.00	A	0	Closed crossing			
New Crossing												
8th Street (near 12th Avenue)	Crossing does not exist				Crossing does not exist				24	0.22	B	919
23rd Avenue	Crossing does not exist				Crossing does not exist				78	0.41	C	1,069
29th Avenue (CBEC Mainline)	Crossing does not exist				Crossing does not exist				5	0.12	A	74
Total Daily Delay to Vehicles Delayed by Trains (Hours)	**223.65**				**343.91**				**198.78**			

Consequently, this section focuses more on railroad-related safety issues including train operations; at-grade crossings used by vehicles, pedestrians, and trains; and train transport of hazardous materials. During Tier 2, data was gathered to characterize current and future train traffic and operations in eastern Council Bluffs, especially at at-grade intersections. The volumes and types of hazardous materials transported in the study area were also evaluated under current and likely future operations. Emergency service responders (police, fire, and ambulance) help keep the public safe, and their locations and routes were evaluated for potential impacts.

3.5.1 Existing Conditions

A roadway safety issue not addressed in detail in the Tier 1 DEIS concerns traffic in the area of the South Expressway. The I-80/I-29 southbound segment between South Expressway and the East System Interchange currently has operational issues as a result of a high number of slow-moving heavy vehicles entering the Interstate from the South Expressway loop ramp merging with the high-speed Interstate traffic. This location is one of the main areas of concern along the Interstate system with regard to operational/safety issues since speed differential is one of the key factors to causes and severity of crashes.

Section 1.4.2 provided background information on crashes at selected at-grade crossings within the study area. Table 1-3 shows the crashes that have occurred at the at-grade crossings. In addition to the safety concerns of an at-grade crossing, vehicular delay and congestion can indirectly cause potential safety issues by drivers adjusting their travel patterns to avoid train delay.

Another safety concern is the shipment of large quantities of hazardous materials along railroad tracks in the study area. Ethanol is shipped by rail from SIRE in approximately seventy-five 30,000-gallon cars along the CBEC track through the Lewis Central Campus. Although these shipments are restricted to between midnight and 5 A.M., transport of ethanol through a school campus is a safety concern. Union Pacific Railroad Company utilizes IAIS track to service Searle Petroleum Company. Approximately twenty 24,000-gallon cars service the Searle Petroleum Company facility on a weekly basis. The petroleum is shipped west through Council Bluffs.

Emergency service providers are located in the City, but none are in the study area. The nearest police station is located in downtown Council Bluffs and the nearest fire stations are located in downtown and southwest of the study area at 34th Avenue/11th Street. Ambulance service in the study area would be provided by the downtown fire station. Two hospitals serve the Council Bluffs area and are located approximately 2 miles northeast of the study area.

3.5.2 No-Build Alternative

The No-Build Alternative would include sixteen at-grade crossings open to both increased vehicular and train traffic. Train and vehicle traffic is projected to increase in the future, increasing the continued potential of train and vehicle crashes at at-grade intersections (Table 3-6).

TABLE 3-6
Existing, 2030 No-Build, and Build Average Daily Traffic and Trains Per Day

	Average Daily Traffic			Trains Per Day		
At-Grade Crossing	2010 Existing	2030 No-Build	2030 Build	2010 Existing	2030 No-Build	2030 Build
Existing Crossing						
Main Street	900	1,100	Crossing closed	12	15	Crossing closed
6th Street	1,000	1,200	Crossing closed	12	15	Crossing closed
7th Street	600	700	Crossing closed	12	15	Crossing closed
8th Street	3,600	4,100	Crossing closed	12	15	Crossing closed
7th Street (near 14th Avenue)	600	600	Crossing closed	7	8	Crossing closed
6th Street (near 15th Avenue)	1,000	1,200	1,200	8	9	23
16th Avenue (Main Street)	7,500	8,300	8,300	8	9	23
16th Avenue (east of Main Street)	5,400	6,200	Crossing closed	12	15	Crossing closed
29th Avenue (Bartlett Tracks)	2,500	2,600	Crossing closed	1	1	Crossing closed
29th Avenue(BNSF Mainline)	2,500	2,600	Crossing closed	11	14	Crossing closed
29th Avenue (CBEC Mainline)	600	600	Crossing closed	4	4	Crossing closed
30th Avenue	11,600	13,400	Crossing closed	12	15	Crossing closed
32nd Avenue	10,800	12,500	Crossing closed	12	15	Crossing closed
E South Omaha Bridge Road	700	800	Crossing closed	4	4	Crossing closed
192nd Street	300	300	Crossing closed	4	4	Crossing closed
W Levee Bridge	0	0	Crossing closed	4	4	Crossing closed
E Levee Bridge	0	0	Crossing closed	4	4	Crossing closed
Farmer's Crossing (east of 192nd Street)	0	0	Crossing closed	4	4	Crossing closed
New Crossing						
8th Street (near 12th Avenue)	3,600	4,100	4,100	Crossing does not exist		14
23rd Avenue	Road not constructed		2,600	Crossing does not exist		2
29th Avenue (CBEC Mainline)	Road not constructed		600	Crossing does not exist		4

Source: FRA, 2010; HDR, 2011

The I-80/I-29 southbound weaving segment between South Expressway and the East System Interchange would remain, causing increasing safety concerns (compared to existing conditions) with future increases of vehicular traffic volume. The CBEC track bisecting the Lewis Central Campus would remain a safety concern and like the at-grade crossings, safety concerns would be escalated with the possible increase in train traffic coupled with the increase in vehicular traffic volumes in this area. Safety concerns regarding the shipments from Searle Petroleum would likely increase over time with likely increasing train and vehicle traffic. Emergency service providers would have continued access concerns across at-grade crossings in the study area; given estimated increases in train and vehicular traffic, concerns would worsen regarding access restriction and increased trip times to respond to incidents.

3.5.3 Revised Build Alternative B

The impacts of the Revised Build Alternative B on safety within the study area are expected to be positive. Sixteen at-grade crossings will be closed along the Segment 3 rail corridors with the addition of three new at-grade crossings for a net reduction of thirteen at-grade crossings (Table 3-6). The at-grade crossing removals would reduce the City of Council Bluffs at-grade crossings by approximately ten percent, minimizing vehicle/train exposure in the Segment 3 study area and ultimately reducing the risk of at-grade crashes in this area.

Active safety crossing devices are proposed to be added to two of the three new crossings; the new crossing on relocated 29th Avenue would be a relocated crossing that currently only has a passive device (crossbucks) due to very low vehicular and rail traffic and is only proposed to have crossbucks at the future at-grade crossing. The new at-grade rail crossing at 23rd Avenue will have flashers and gates interconnected with the adjacent traffic signal at 23rd Avenue and South Expressway. The new at-grade rail crossing at the intersection of 8th Street and 12th Avenue will have flashers and gates on the approaches and exits for all legs of the intersection (8 total gates).

In addition to at-grade crossing removals, the proposed railroad consolidation would eliminate the railroad corridor that bisects Lewis Central High School and Middle School property. Placing this corridor out-of-service would improve safety for Campus users by eliminating ethanol transport next to the school as well as coal shipments that traverse through an at-grade crossing separating the Campus. Safety concerns regarding the shipments from Searle Petroleum would be the same as under the No Build Alternative.

The I-80/I-29 southbound Interstate weaving segment between South Expressway and the East System Interchange would be eliminated as a result of the railroad consolidation of the Revised Build Alternative B. Rail consolidation would allow for a northward shift in 29th Avenue and better accommodation of traffic on a parallel entrance ramp from South Expressway to the Interstate. This parallel ramp would eliminate the weaving of slow-moving heavy vehicles with the high speed Interstate traffic. Eliminating the weave would improve operations and safety in this area and remove one of the main areas of operational concern along the CBIS.

Emergency service providers (fire, police, and ambulance services) that traverse the study area noted that they supported the proposed improvements because of anticipated reduced service times. The emergency medical services division chief noted that their main concern with the construction project would be ensuring the safety of their personnel when

responding to emergencies in the construction areas. He requested consideration of temporary signage to help reduce vehicular speeds and alert the drivers to changing roadway conditions during construction (HDR 2010c).

3.5.4 Avoidance, Minimization, Mitigation

Iowa DOT would provide temporary signage to help reduce vehicular speeds and alert the drivers to changing roadway conditions during construction.

3.6 Wetlands and Waters of the U.S.

Waters of the U.S., including wetlands and waterways, are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act[1] (33 United States Code [USC] 1251 et seq.). Wetlands are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328).

A permit from USACE is required to authorize the discharge of dredged or fill material into waters of the U.S. In addition, the Iowa Department of Natural Resources (DNR) has regulatory jurisdiction over all waters within the project area. For a discussion of the permits and approvals (including those for wetlands and waters of the U.S.) required for the Segment 3 Project, see Section 3.15.

During Tier 1, field wetland determinations were conducted in fall 2002 to review the presence of U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) polygons and to identify potential wetlands in the CBIS study area and area of potential impact. As part of Tier 2 investigations, wetland delineations[2] were conducted within the Tier 1 area of potential impact because the preliminary impact area for Tier 2 had not been determined at the time of the field surveys. The field investigations, which were conducted in late summer 2005, determined the boundaries of waters of the U.S., including wetlands that could be affected by Segments 1, 2, and 3 of the CBIS Improvements Project. Results of the wetland delineation survey are documented in a technical memorandum (HDR 2006b). Additional wetland delineations were conducted in summer and fall 2008 as a result of the railroad corridor consolidation study, and summarized in memorandum addenda (HDR 2008, HDR 2009). Wetland delineations were conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). USACE guidance specifies that wetland delineations are valid for a period of five years, unless new information warrants revision of the delineation before the expiration date (RGL 05-02, RGL 08-02). Wetland delineations that were conducted in 2005 within the Tier 1 area of potential impact were re-verified in late summer 2010 to determine if site conditions within the area of potential impact had changed since the original delineations were conducted.

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[1] USACE also regulates lakes, natural ponds, and impoundments; however, none of these are present in the Segment 3 Study Area, and no further discussion of these resources is warranted. The Schildberg pond in the I-80/I-29 East System interchange was determined not to be a water of the U.S. and is not discussed in this section. Occasionally, one or more parameters may have been sufficiently altered by recent human activities or natural causes to preclude the presence of wetland indicators of the parameters. However, USACE may determine that they are jurisdictional wetlands.

[2] A wetland delineation is a survey conducted by a qualified person to determine the extent of wetland and the types of wetland that would be affected by a project. A wetland must exhibit hydrophytic vegetation (that is, vegetation adapted to living in saturated soil conditions), hydric soils (that is, soils that have or are characterized by excessive moisture), and wetland hydrology.

3.6.1 Existing Conditions

3.6.1.1 Wetlands

For the Tier 2 delineations, soil profiles were characterized for hydric soil indicators and used to verify the mapped soil types in the Pottawattamie County soil survey (U.S. Department of Agriculture, Natural Resources Conservation Service 1989). Ground surface inundation, soil saturation, and other physical hydrology indicators were used to determine whether a site contained wetland hydrology. Vegetation was identified to the species level and then referenced to the National List of Plant Species That Occur in Wetlands for Region 3 (Iowa) (Reed 1988). Wetland indicator status was documented to determine whether areas contained predominantly hydrophytic or upland vegetation.

The 2005 and 2008 Tier 2 delineations identified 28 wetlands in the Segment 3 study area totaling roughly 59 acres. The 2010 delineations identified three additional wetlands in the Segment 3 study area totaling 5.5 acres, determined that some of the previously identified wetlands changed in size, and eliminated one 3.77-acre wetland that had been filled by non-project-related development. Most of the wetlands are located in the general area of the I-80/I-29 East System interchange and north of 29th Avenue (Figures 3-6A and 3-6B). Most are small (less than 1 acre), and the cover type (plant community) is palustrine emergent (Table 3-7). Palustrine emergent wetlands, which account for 47.94 of the 53.20 acres delineated, are freshwater wetlands with herbaceous vegetation. There are five palustrine forested wetlands in Segment 3 (wetlands 47, 100, 105, 106, and 111). Palustrine forested wetlands have woody vegetation more than 20 feet tall. Because the wetlands are within a floodplain, they provide some degree of flood storage function. With most of the wetlands receiving drainage from adjacent commercial/industrial development or the Interstate system, they also provide water quality benefits. To a limited extent, the wetlands provide wildlife habitat.

3.6.1.2 Waterways

For this discussion, waterways include rivers, streams, intermittent streams, and drainage ditches. According to USACE policy, a waterway is subject to the requirements of Section 404 of the Clean Water Act if has an ordinary high water mark (RGL 05-05). Five waterways were identified in Segment 3 and are shown on Figure 3-7: Mosquito Creek, Drainage Lateral 5, an unnamed agricultural drainage ditch between 192nd Street and Mosquito Creek south of the U.S. 275/IA 92 interchange (WUS 5), an unnamed agricultural ditch that runs parallel to the CBEC Railroad east of 192nd Street (WUS 100), and an unnamed agricultural ditch east of Mosquito Creek at the extreme south end of the study area (WUS 200).

Mosquito Creek. Mosquito Creek is a warm-water perennial stream that crosses I-29 in the south part of the study area and I-80 in the north (Figure 3-7). The creek has a 20- to 30-foot-wide channel and banks that are 7 to 15 feet high. The average depth of Mosquito Creek generally is less than 1 foot, although its ordinary high water mark varies from 2 to 7 feet above the water surface elevation. A levee is located on both sides of Mosquito Creek from Harry Langdon Boulevard to the south. There is no surface water drainage between Mosquito Creek and Lake Manawa, but the two are connected by a 48-inch pipeline. The pipeline is used in the fall to divert water into the lake, but it also could be used to reduce water levels in the lake during high water and minimize the potential for flooding.

TABLE 3-7
Segment 3 Wetlands

Wetland #	Size (acres)	Wetland Type	Comments
40	0.29	PEM	Located just east of the BNSF rail and north of commercial development. Receives drainage from the commercial area.
41	0.76	PEM	Located in low area between commercial development and I-80/I-29 East System interchange. Several storm sewer outlets drain into the wetland.
47	1.02	PEM	Located just west of BNSF rail yard. Includes open water.
	2.15	PFO	
48	0.08	PEM	Located at the north edge of the pond near the BNSF rail yard and within the I-80/I-29 East System interchange. Smallest wetland delineated in Segment 3.
49	0.07	PEM	Located along east edge of a concrete and asphalt recycling area.
51	0.87	PEM	Area of smartweed, prairie cordgrass, reed canary grass, and spikerush within I-80/I-29 East System interchange.
52	0.78	PEM	Located along east edge of pond near the BNSF rail yard within the I-80/I-29 East System interchange.
53	1.05	PEM	Located along the south edge of pond near the BNSF rail yard within the I-80/I-29 East System interchange.
55	0.37	PEM	Located in the center of the East System interchange. Receives drainage from a culvert.
56	0.93	PEM	Located along Drainage Lateral 5 within the I-80/I-29 East System interchange.
57	0.36	PEM	Located along Drainage Lateral 5 within the I-80/I-29 East System interchange.
58	0.16	PEM	Located along a narrow drainage way through the center of the I-80/I-29 East System interchange.
76	1.28	PEM	Located in the southwest quadrant of the U.S. 275/IA 92 Interchange. Receives runoff from several culverts.
100	0.48	PEM	Located within the I-80/I-29 East System interchange between Drainage Lateral 5 and the CBEC Railroad.
	1.67	PFO	
101	0.11	PEM	Emergent wetland vegetation within mapped drainage channel.
102	0.16	PEM	Fringe wetland along defined drainage channel (WUS 100).
104	0.87	PEM	Inundated borrow pits.
105	0.19	PFO	Forested wetland in ditch between railroad tracks.
106	0.45	PFO	Forested wetland in ditch between railroad tracks.
108	27.04	PEM	Emergent wetland west of defined drainage channel.
110	0.08	PEM	In ditch east of railroad.
111	0.80	PFO	Continuation of 2005-delineated Wetland 47.
200	0.55	PEM	Cattail dominated area that may be an old borrow site.

TABLE 3-7
Segment 3 Wetlands

Wetland #	Size (acres)	Wetland Type	Comments
201	1.63	PEM	Wet, emergent area, south of the SIRE railroad track, which appears to be an old borrow site.
202	1.16	PEM	Wet, emergent area, north of the SIRE railroad track, which appears to be an old borrow site.
203	0.31	PEM	Sediment basin constructed in association with a new, adjacent residential development.
204	1.37	PEM	Wet, depressional area on BP/Amoco property.
301	0.05	PEM	Small, depressional area underneath westbound bridge of the I-80/I-29 East System interchange.
302	5.43	PEM	Farmed wetland located adjacent to the East System interchange ramp that connects northbound I-29 with eastbound I-80
303	0.68	PEM	Located northwest of the U.S. 275/IA 92 interchange in the bottom of the graded ditch/stormwater detention areas on both sides of Denmark Drive.
Total	**53.20**		

Note: PEM = palustrine emergent, PFO = palustrine forested

At the east end of Segment 3, a 60-inch storm sewer pipe near the Madison Avenue interchange drains into Mosquito Creek. The pipe is fed by a system of storm sewers draining a 350-acre urban area north of I-80. The 60-inch storm sewer is equipped with a flap gate to prevent water from backing up into the storm sewer system when the water level of Mosquito Creek is high.

The eastern part of Mosquito Creek, which crosses through the study area, is classified as a limited warm-water resource capable of supporting limited aquatic life populations, composed of minnows and other non-game fish species. The 1996 Iowa DNR Stream Assessment determined that, although the quality of aquatic habitat in the area was relatively high, very few fish were observed.

Water quality information for Mosquito Creek is found in Section 3.8.1.

Drainage Lateral 5. Drainage Lateral 5 enters the north end of the study area just west of the BNSF railroad tracks and flows under 29th Avenue before entering the I-80/I-29 East System interchange. It flows through the system interchange, meandering slightly to the southwest where it flows under the BNSF railroad bridge and is joined by Drainage Lateral 5a. It continues south and enters Mosquito Creek about 2 miles south of the project area. Figure 3-7 shows the location of Drainage Lateral 5 and 5a.

Drainage Lateral 5 is a manmade drainage channel with intermittent flow. Its channel varies from 10 to 15 feet wide and 3 to 4 feet deep through the I-80/I-29 East System interchange. Within the system interchange it flows through three 10- by 10-foot culverts. The channel within the I-80/I-29 East System interchange and to the south is overgrown with vegetation, which limits its conveyance capacity. Evidence of this is that wetlands (51, 56, 57) have formed along the channel. Drainage Lateral 5 conveys runoff from the I-80/I-29 East System

interchange and receives runoff that Drainage Lateral 5a carries from the South Expressway. It should be noted that the Schildberg pond within the I-80/I-29 East System interchange is hydraulically connected to Drainage Lateral 5. The pond appears to gain and lose water from and to Drainage Lateral 5 depending on the pond elevation. More information about the Schildberg pond is found in Section 3.11 (Regulated Materials).

Agricultural Ditch (WUS 5). WUS 5 is an unnamed agricultural ditch that runs under I-29 in a box culvert east of the BP Terminal (Figure 3-7). The ditch, which is about 4 feet wide, holds stormwater runoff from I-29.

Agricultural Ditch (WUS 100). WUS 100 is an unnamed agricultural ditch that runs along the east edge of the part of the CBEC Railroad tracks between Harry Langdon Boulevard and 192nd Street (Figure 3-7). The 4-foot-wide ditch conveys agricultural runoff.

Agricultural Ditch (WUS 200). WUS 200 is an unnamed agricultural ditch that is located between I-29 and Mosquito Creek at the south end of the project (Figure 3-7). The ditch, which is about 3 feet wide with 5-foot-high banks, feeds Mosquito Creek.

3.6.2 Impacts

3.6.2.1 No-Build Alternative

It is possible that features of the No-Build Alternative, such as the proposed improvement of the U.S. 275/IA 92 interchange (wetland 76) and the extension of the 2-lane roadway into the Metro Crossing Shopping Center (Drainage Lateral 5 wetlands), could affect wetlands. Some dredging may be required along Drainage Lateral 5 to improve the flow of drainage through the I-80/I-29 East System interchange. It is expected, however, that the impact of the No-Build Alternative on wetlands and waters of the U.S. would be less than that of the Revised Build Alternative B.

3.6.2.2 Revised Build Alternative B

Wetlands. Based on the preliminary impact area shown in Figure 3-1 and wetland delineation boundaries, Revised Build Alternative B would affect 25 of the 30 wetlands discussed in Section 3.6.1.1 (Table 3-8). Wetlands 41, 110, 111, 200, and 203 would not be affected by the proposed improvements. As noted in Section 2, Alternatives, Revised Build Alternative B would be constructed as two separate projects: an Interim Project and an Ultimate Project. Given that possibility, Table 3-8 indicates whether the wetlands would be affected by the Interim Project or the Ultimate Project.

Revised Build Alternative B would affect 18.26 acres of wetland (Figures 3-6A and 3-6B), of which 15.95 acres are palustrine emergent wetland and 2.31 acres are palustrine forested wetland. Of the 25 affected wetlands, 22 are palustrine emergent wetlands, two are palustrine forested wetlands, and one (wetland 100) is a mix of palustrine emergent and palustrine forested wetland. Wetland 47 also includes palustrine emergent and palustrine forested types, but only the palustrine emergent type would be affected. Wetland 69, which was identified during the initial 2005 wetlands review, has been completely filled by construction of the Metro Crossing shopping center.

TABLE 3-8
Affected Wetlands

Wetland ID	Size (acres)	Impact Area (acre)	Impact Under Interim/Ultimate Build Projects	Impact Description
40	0.29	0.29	Ultimate	Retaining wall construction
47	3.18	0.41	Ultimate	Relocated 29th Avenue
48	0.08	0.08	Interim	Construction of WB to SB ramp
49	0.07	0.07	Interim	Construction of WB to SB ramp
51	0.87	0.87	Interim	I-80/I-29 East System interchange
52	0.78	0.78	Interim	I-80/I-29 East System interchange
53	1.05	1.05	Interim	I-80/I-29 East System interchange
55	0.37	0.37	Interim	I-80/I-29 East System interchange
56	0.93	0.93	Interim	I-80/I-29 East System interchange
57	0.36	0.19	Interim	I-80/I-29 East System interchange
58	0.16	0.16	Interim	I-80/I-29 East System interchange
76	1.28	1.28	Interim	Construction of U.S. 275
100	2.15	2.15	Interim	I-80/I-29 East System interchange
101	0.11	0.003	Interim	Track construction
102	0.16	0.004	Interim	Track construction
104	0.87	0.14	Interim	Construction of U.S. 275
105	0.19	0.19	Interim	Track construction
106	0.45	0.45	Interim	Track construction
108	27.04	0.23	Interim	Construction of relocated 23rd Ave
201	1.63	0.73	Interim	Track construction
202	1.16	1.16	Interim	Track construction
204	1.37	0.56	Interim	Retaining wall construction
301	0.05	0.05	Interim	I-80/I-29 East System Interchange
302	5.43	5.43	Interim	Construction of NB to EB ramp
303	0.68	0.68	Interim	Construction of U.S. 275
Total	**50.7**	**18.26**		

Revised Build Alternative B not only would fill wetlands, it would also affect wetland functions and values. However, because of the position of the affected wetlands within an urban interchange and other disturbed parts of the study area, the function and value of the current wetlands is notably diminished. Loss of wetland would have a minor impact on the limited wildlife in the area. For wetlands adjacent to Drainage Lateral 5 (100, 51, 56, 57), there would be some loss of nutrient retention and sediment trapping, thus reducing water quality benefits. There would be a similar loss with wetlands 40 and 76, which filter runoff from the road system and commercial areas.

Indirect wetland impacts could occur adjacent to direct wetland impacts as a result of sedimentation or loss of suitable habitat characteristics. No wetland impacts are expected as a result of indirect development. As noted in the Tier 1 Draft EIS, the proposed improvements do not systematically direct future development toward the necessity of wetland fill.

Overall, the estimated 18.26-acre wetland impact caused by Revised Build Alternative B would not be significant because of the degraded conditions of the wetlands, the mitigation measures Iowa DOT would implement (see Section 3.6.3), and the expectation that wetlands may be reestablished within the I-80/I-29 East System interchange because of the extremely flat topography and the amount of runoff that enters the interchange infield area.

Waterways.

I-29 Mosquito Creek Crossing. Two replacement I-29 bridges are proposed over Mosquito Creek south of the U.S. 275 interchange. The new bridges will be shifted to the northeast of the existing bridges and lengthened in order to accommodate crossing of Mosquito Creek and its levee system and the relocated railroad corridor. The new structures would span Mosquito Creek and the new railroad corridor and would have the new piers aligned with the stream as well as the railroad tracks. Two piers would be located within the levee system near the stream banks; however, no piers would be constructed within the main stream channel. Riprap is proposed along both banks of Mosquito Creek to reduce scour and erosion. The new bridges would be completed before the existing bridges and piers in the creek are removed. A temporary crossing may be constructed to facilitate construction of the new bridges and demolition of the existing ones. Minor channel shaping may occur upstream and downstream of the new structures to accommodate the proposed structure configuration.

U.S. 275/IA 92 Crossing. The U.S. 275/IA 92 crossing over Mosquito Creek consists of dual structures each with 10 piers. None of the piers are located directly in the creek channel. Five of the piers are within the levee system, two of which are on the creek banks. All piers within the levee system are aligned with the creek. Two new structures would replace the existing bridges. The new structures would span Mosquito Creek, and each would have eight piers aligned with the creek. Two piers would be within the levee system near the creek banks; no piers would be constructed within the main stream channel. Riprap is proposed along both banks of Mosquito Creek to reduce scour and erosion. A temporary crossing may be constructed to facilitate construction of the new bridges and demolition of the existing structures. Minor channel shaping may occur upstream and downstream of the new structures to accommodate the proposed structure configuration.

I-80 Mosquito Creek Crossing. At the I-80 Mosquito Creek crossing east of Madison Avenue, two structures currently span the creek. Although none of the six piers are in Mosquito Creek, two piers are on the stream bank. Two new structures would replace the existing bridges. The new structures would span the BNSF Railroad, Mosquito Creek, and Valley View Drive. The new structures would have four bridge piers, and the piers would be located farther from the creek than the existing piers. No channel realignment work is expected. It may be necessary to construct a temporary crossing to facilitate construction of the new bridges and demolition of the existing structures.

Drainage Lateral 5. Drainage Lateral 5 weaves through the I-80/I-29 East System interchange for about 3,050 feet with a channel that varies from a low swale in the interchange to an agricultural drainage. Currently 520 feet of Drainage Lateral 5 flows through culverts. With

Revised Build Alternative B, the channel would be given a more uniform depth and rerouted to accommodate the new interchange configuration. Rerouting Drainage Lateral 5 would shorten it by about 450 feet, and increase its length in culverts by about 485 feet.

Reconstruction of the I-80/I-29 East System interchange would require realignment of the channel, demolition of box culverts, and construction of new culverts. A temporary culvert or channel may be needed to divert stream water during construction of new box culverts. Installation would require excavation, riprap, and earthwork in the channel. The proposed box culverts would likely require some minor channel excavation. Minor channel excavation also is expected at locations where existing box culverts would be extended. Because of the work within and adjacent to Drainage Lateral 5, the entire length of that waterway within the preliminary impact area of Revised Alternative B (4,800 feet) is considered as affected.

Agricultural Ditch (WUS 5). I-29 would be expanded from two lanes in each direction (total width roughly 118 feet) as it crosses the agricultural ditch to three lanes in each direction (total width roughly 158 feet). The proposed widening would require the box culvert to be extended on both sides of I-29. Extending the box culvert 40 feet would require excavation, riprap, and earthwork in the channel and some minor channel excavation. No realignment of the ditch would be necessary with Revised Build Alternative B.

Agricultural Ditch (WUS 100). I-29 would not cross this agricultural ditch, which is adjacent to the CBEC Railroad tracks. As part of the proposed improvements, the semicircular segment of the CBEC track and right-of-way beginning east of I-29 and extending to just west of the Mosquito Creek would be placed out-of-service and turned over to the city. As a result, no impacts to the agricultural ditch are anticipated.

Agricultural Ditch (WUS 200). No Interstate, local road, or railroad improvements cross the agricultural ditch. No impact to this ditch is anticipated.

Revised Build Alternative B would widen the Interstate crossings at Mosquito Creek and the unnamed agricultural ditch (WUS 5). The stream realignment work, placement of riprap, demolition work, and culvert extensions create the potential for erosion and sedimentation. The channel modifications to Drainage Lateral 5 and construction of new culverts would also create the potential for erosion and sedimentation. Erosion and sedimentation during construction would be limited by the provisions of the project's National Pollutant Discharge Elimination System (NPDES) permit. See Section 3.8.3 for more information.

No waterway impacts are expected as a result of indirect development. The levee system, the extent of floodplain adjacent to Mosquito Creek south of Harry Langdon Boulevard, and the extent of floodway and floodplain adjacent to Mosquito Creek north of Harry Langdon Boulevard are notable impediments to development.

Overall, the impacts of the Segment 3 Project on waterways are expected to be minor. Drainage Lateral 5 and the unnamed agricultural ditches are man-made waterways that provide minimal recreational or commercial uses, nor do they provide significant habitat for aquatic or terrestrial wildlife. Temporary and permanent erosion control measures would prevent Mosquito Creek from experiencing long-term sedimentation problems; see Section 3.6.3 for more information. In addition, Revised Build Alternative B would provide for the elimination of one pier within the Mosquito Creek stream channel (at the I-29

crossing), the realignment of the new piers parallel to the creek, and would shift the other piers farther from the stream banks.

3.6.3 Avoidance, Minimization, and Mitigation

3.6.3.1 Waterways

Construction in or near Mosquito Creek, Drainage Lateral 5 and the unnamed agricultural ditch (WUS 5) would be performed in accordance with state and local regulations. The Iowa DOT will protect the adjacent environment from sedimentation and construction material pollutants discharged from construction activities by meeting the provisions of the NPDES permit that it will obtain from the Iowa DNR. See Section 3.8.3 for more information about the NPDES Stormwater program. A Section 404 permit will also be required for filling waters of the U.S. and, in the case of Drainage Lateral 5, shortening its length. More information about the Section 404 permit process is found in Section 3.15.

Erosion control devices would be installed before the onset of construction work that is likely to cause erosion. Construction at Mosquito Creek would be conducted during periods of low or normal flow, avoiding work to the extent possible between March 15 and June 15. Because Drainage Lateral 5 has intermittent flow and the unnamed agricultural ditch (WUS 5) has ephemeral flow, there may be more flexibility in the timing of "in-stream" work at those locations. Stream flows would not be interrupted, and a culvert would be put in place where temporary in-channel fill could impound water. Temporary and permanent erosion control methods could include silt fences, retention basins, detention ponds, interceptor ditches, seeding, sodding, installing riprap on exposed embankments, installing erosion mats, and mulching. Disturbed areas would be graded and seeded as soon as possible to minimize erosion. The selected contractor would participate in determining suitable erosion control methods, and those methods would be documented in a Storm Water Pollution Prevention Plan (SWPPP). Development of a SWPPP is a requirement of the NPDES permit. See Section 3.8.3 for more information about the SWPPP process.

3.6.3.2 Wetlands

Executive Order 11990, Protection of Wetlands, requires federal agencies (including FHWA) to implement "no net loss" measures for wetlands (42 *Federal Register* 26961). These measures include the following phased approach:

1. Avoidance—Impacts on wetlands are avoided through alignment design.
2. Minimization—If wetland impacts cannot be fully avoided, they are minimized to the maximum extent practicable.
3. Mitigation—Unavoidable impacts on wetlands may be mitigated through on- or off-site wetland creation, restoration, or enhancement. (Mitigation requirements are regulated by USACE as part of the Section 404 permit process.)

The discussion below summarizes the measures taken in Segment 3 to meet the requirements of Executive Order 11990.

Wetland Avoidance. Because of the extent of the I-80/I-29 East System interchange reconstruction and the location of wetlands within the interchange and other locations in the

study area, it is not possible to avoid wetland impacts. Although all wetlands cannot be avoided, measures have been taken to minimize wetland impacts.

Wetland Minimization. The Iowa DOT considered measures to minimize wetland encroachment during the development and design of alternatives in Tier 1 and Tier 2. For example, impacts to wetland 41 would be avoided by constructing a retaining wall along the new roadway instead of a standard foreslope. The Iowa DOT would continue evaluating measures during final design to reduce Revised Build Alternative B wetland impacts.

Wetland Mitigation. In accordance with state and federal policies and regulations for wetland preservation, including the Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR, Part 230) and Iowa Administrative Code 314.23, Iowa DOT will mitigate the project's wetland impacts where impacts to jurisdictional aquatic resources cannot be avoided. Mitigation would be provided at a ratio deemed appropriate by the USACE. Wetland mitigation for the Segment 3 project will be achieved by purchasing certified wetland mitigation credits from the G. William Coulthard Trust Wetland Mitigation Bank located in Harrison County, Iowa. Although wetlands would be affected at different intervals during the Interim Project and Ultimate Project, the Iowa DOT will seek to acquire one Section 404 Individual Permit authorizing the entire Segment 3 project.

3.6.4 Only Practicable Alternative Finding for Wetlands

Because Revised Build Alternative B would affect wetlands, the FHWA must find that there are no practicable alternatives to construction in wetlands. This subsection sets forth the basis for a finding that there is no practicable alternative to construction in the wetlands located along the project corridor. That finding is made in accordance with the requirements of Executive Order 11990 on the Protection of Wetlands dated May 24, 1977.

Revised Build Alternative B would affect 25 wetlands totaling 18.26 acres. Because wetlands are located within the I-80/I-29 East System interchange, which would be substantially reconfigured, and adjacent to other segments of the Interstate and proposed railroad consolidation improvements, it is not possible to avoid wetland impacts completely. The amount of regrading and filling required to construct the roadway and railroad improvements would result in unavoidable wetland impacts. It is not practical to shift the Interstate alignment or the railroad consolidation improvements in order to avoid wetlands.

The No-Build Alternative was eliminated from consideration because it would fail to meet the project's purpose and need objectives (see Section 2). Revised Build Alternative B satisfies the transportation objectives set out in the Purpose and Need Section of the Tier 1 Draft and Final EISs, and Section 2 of this Tier 2 EA. Measures to minimize harm to wetlands are discussed above. The Tier 1 Draft and Final EISs and this EA have been coordinated with federal and state agencies.

Based upon the above factors and considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands in Segment 3, and that Revised Build Alternative B includes all practicable measures to minimize harm to the wetlands that may result from such use.

3.7 Floodplains

Floodplains provide floodwater and stormwater attenuation by decreasing water velocities and providing temporary water storage. By temporarily storing water, floodplains allow sediments to settle, and provide erosion control. They also provide important ecosystem functions such as nutrient export, increased primary productivity, and wildlife habitat and movement corridors. The extent to which these functions are expressed varies depending on vegetative structure, stream hydrology, and distance from the stream.

The Tier 1 EIS for the CBIS Improvements Project used Federal Emergency Management Agency (FEMA) data to identify the 100-year floodplain and floodways within the study area.

The following definitions from FEMA are used in this section:

- *Floodplain* is the land adjacent to a body of water, with ground surface elevations at or below the 1 percent annual chance of flooding or 100-year flood elevation.
- *Floodway* is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

3.7.1 Existing Conditions

3.7.1.1 Floodplains

Large areas of the Segment 3 study area are within the 100-year floodplain of Mosquito Creek. Areas outside the floodplain include segments of I-80 between Harry Langdon Boulevard and Madison Avenue and east of the Madison Avenue interchange to the east terminus near Franklin Avenue. A large area north and south of I-80/I-29 between South Expressway and Indian Creek is also outside the floodplain (Figure 3-8). This segment is protected by a levee system along Indian Creek and the roadway embankment for the South Expressway, which is above the 100-year flood elevation. Finally, a large area west of Mosquito Creek and south of U.S. 275/IA 92 is also outside the floodplain. This area is protected by a levee system along Mosquito Creek and the roadway embankment for I-29 and U.S. 275/IA 92.

The Mosquito Creek watershed drains 250 square miles to the Missouri River. Tie-back levees to Missouri River Levee Unit L-624 extend upstream along both banks of Mosquito Creek from the Missouri River to Harry Langdon Boulevard. The 100-year floodplain boundaries for Segment 3 were obtained from flood insurance rate maps published by FEMA for Pottawattamie County, Iowa (FEMA 2005). Part of the Segment 3 study area is within the Mosquito Creek #22 drainage district. The latest Mosquito Creek flood insurance study covering Council Bluffs and unincorporated Pottawattamie County became effective February 4, 2005.

In February 2004, the USACE completed a preliminary assessment of the flooding problem along Mosquito Creek titled, *Preliminary Assessment Report, Section 205 Feasibility Study, Mosquito Creek, Council Bluffs, Iowa* (USACE 2004). The purpose of the report was to determine whether federal participation in additional flood damage reduction studies was warranted. The report did not identify any economically feasible solutions regarding reduction in flood damage, and stated there was no federal interest in pursuing further studies.

3.7.1.2 Natural and Beneficial Floodplain Values

Floodplains in their natural or relatively undisturbed state serve water resource values (natural moderation of floods, water quality maintenance, and groundwater recharge); living resource values (fish, wildlife and plant resources); open space resource values (recreation); and cultivated resource values (agriculture, aquaculture and forestry). The floodplain within the preliminary area of effect is generally a mix of agricultural land (cultivated resource value) and urban/built-up land. Cover types that are part of the water, living, and open space resource values are largely absent in Segment 3 floodplains.

3.7.1.3 Floodways

Figure 3-9 shows the mapped floodway for Mosquito Creek north of Harry Langdon Boulevard. Floodway information was obtained from flood insurance rate maps referred to in the floodplain discussion. The Mosquito Creek floodway is adjacent to part of the BNSF and Iowa Interstate railroad tracks north of Harry Langdon Boulevard, and it crosses under Madison Avenue and I-80. No other floodway was identified in Segment 3.

3.7.2 Impacts

Executive Order 11988, Floodplain Management (42 *Federal Register* 26951), and 23 CFR 650 Subpart A direct federal agencies to take action to reduce the risk of flood loss; to minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. The Order also requires agencies to elevate structures above the base flood level whenever possible. The object of the Order is to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

3.7.2.1 No-Build Alternative

Although some capacity improvements and segments of new road are recommended with the No-Build Alternative, those improvements would not likely adversely affect floodplains or the Mosquito Creek floodway.

3.7.2.2 Revised Build Alternative B

Floodplains. Roadway and railroad construction within the 100-year floodplain would occur in the central part of Segment 3 at the I-80/I-29 East System interchange, along the southern leg of I-29 within all quadrants of the U.S. 275/IA 92 interchange except the southwest quadrant, and along U.S. 275/IA 92 east of the interchange (Figure 3-8). Roadway construction within the 100-year floodplain would also occur in the eastern part of the project area near the Madison Avenue interchange, as well as east of the South Expressway interchange. Revised Build Alternative B would affect about 437 acres within the 100-year floodplain (Table 3-9). This amount includes all the floodplain within the preliminary impact area. As design continues and the amount of fill below the 100-year floodplain for new roadway embankments and bridge piers is determined, the acres of floodplain affected would be expected to decrease. Given the extent of the floodplain, particularly within the I-80/I-29 East System interchange, and the extent of the roadway and railroad improvements, there is no practicable alternative to construction in floodplains.

TABLE 3-9
100-Year Floodplain Encroachments

Location of 100-Year Floodplain	Floodplain within Preliminary Impact Area (acres)	Existing Structure within Impact Area (Y/N)
I-80/I-29 East System interchange area	231	Yes
Madison Avenue interchange area	24	Yes
East of South Expressway	33	Yes
U.S. 275/IA 92 interchange area (including south terminus)	149	Yes

Because of the extent of floodplain in Segment 3, it is not possible to fully differentiate whether floodplain impacts would be caused by transverse or longitudinal floodplain crossings. Transverse crossings are roughly perpendicular to the floodplain edge; longitudinal encroachments run roughly parallel with the floodplain edge. The proposed Segment 3 improvements have elements of transverse and longitudinal crossings and are also surrounded by floodplain.

All roadway structures crossing floodplains would be sized to handle the 100-year flood without interruption to public transportation caused by flood damage to the roadway or structures. None of the crossings would interrupt or terminate a transportation route needed for emergency vehicles or serving as the area's only evacuation route. Crossings would be consistent with local floodplain management goals and objectives. For the proposed improvements on embankment in the floodplain, the roadway surface would be 3 feet above the 100-year flood elevation.

At the I-29 crossing of Mosquito Creek near the BP Terminal, the levees tie into the foreslopes of the I-29 roadway embankment at the bridge abutments. This essentially makes the roadway embankment a part of the levee system through the bridges.

The 2010 Mosquito Creek hydraulic study found that the proposed I-29 bridges over Mosquito Creek would not create a rise in the floodplain level. With the proposed I-29 Mosquito Creek bridges, which would be about 275 feet north of the existing crossing, some levee reconstruction work would be needed after demolition of the existing structures and their embankments, which form part of the levee. The levee will be reconstructed to its preexisting dimensions and configuration.

As noted, Mosquito Creek will continue to overtop the levees during a 100-year flood at the proposed U.S. 275/IA 92 structures. The overtopping is built into the hydraulic model, and the USACE does not recommend raising the levees to contain the flood flows. The Iowa DOT has adopted this recommendation.

The existing and proposed I-80 Mosquito Creek bridges were not included in the 2010 Mosquito Creek hydraulic study because the 2005 flood insurance study shows minimal backwater and 21 feet of freeboard with the existing 602-foot bridge. The proposed 700-foot bridge would not reduce the existing waterway opening and, with two fewer piers than the existing bridges, should not increase the creek's flood stages. See Iowa DOT's October 2005 letter to Iowa DNR in Appendix A.

Therefore, although the roadway and railroad components of Revised Build Alternative B would place fill in the 100-year floodplain, the fill is not expected to have a significant impact on Segment 3 floodplains.

Natural and Beneficial Floodplain Values. Land uses within the Segment 3 floodplain include a mix of farmland, undeveloped land within the I-80/I-29 East System interchange, and urban land (with residential, commercial, and industrial developments). The urban land serves no natural floodplain values. The loss of farmland and undeveloped land within the interchange provides a minor contribution to slowing floodwaters and reducing flood velocities and peaks. Given the small acreage affected compared to the size of the floodplain, loss of floodplain in Segment 3 is not expected to alter the flood hazard.

Floodway. The Mosquito Creek floodway crosses under the east side of the Madison Avenue interchange and I-80. FEMA requires that construction within a floodway achieve a no-rise condition. Although the 2010 Mosquito Creek hydraulic study did not include replacing the I-80 bridges with new structures, no rise in the floodway elevation is expected with Revised Build Alternative B for the reasons given above in the floodplain impact discussion. The proposed improvements to the BNSF/Iowa Interstate Railroad and U.S. 275/IA 92 east of Harry Langdon Boulevard would be at the edge of the floodway and would not be expected to affect floodway elevations (Figure 3-9).

3.7.3 Avoidance, Minimization, and Mitigation

The object of Executive Order 11988 is to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. When a proposed action is to occur in the base floodplain, the Executive Order requires that practicable alternatives to avoid affecting the floodplain be identified.

Because large areas of the Segment 3 Project lie within the Mosquito Creek floodplain, encroachment on floodplains is unavoidable. A Floodplain Development Permit and a Sovereign Lands Construction Permit will be required for the proposed Revised Build Alternative B improvements. See Section 3.15 for more information.

3.7.3.1 Floodplain Minimization

Floodplain impacts were minimized by reducing the number of piers in the floodplain at the I-29 and I-80 crossings of Mosquito Creek, and by removing existing piers from within Mosquito Creek at the I-29 crossing. Except for part of the I-29 southbound embankment and part of the I-29 northbound to I-80 eastbound ramp embankment, which would be left in place to contain runoff from the I-80/I-29 East System interchange, all other segments of embankment would be removed and used as fill for embankments required by Revised Build Alternative B.

3.7.3.2 Floodplain Mitigation

Given the "no-rise" finding of the 2010 I-29 Mosquito Creek hydraulic study, the USACE's recommendation that the levees not be raised at the U.S. 275/IA 92 crossing, the potential floodplain improvements at the I-80 Mosquito Creek crossing, and the small size of the floodplain impact compared to the size of the Mosquito Creek floodplain, no floodplain mitigation is proposed.

3.7.4 Only Practicable Alternative Finding for Floodplains

Executive Order 11988 and 23 CFR 650 require that federal agencies avoid, to the extent practicable, impacts to natural floodplain values and incompatible floodplain development. The following information sets forth the basis for a finding of no practicable alternative to floodplain encroachment associated with Revised Build Alternative B in Segment 3, and demonstrates that the proposed improvements would include all practicable measures to minimize harm to the natural floodplain values.

The roadway and railroad improvements would require construction at several locations within the Mosquito Creek floodplain. Given the current alignment of the Interstate system and railroad network through the expansive Mosquito Creek floodplain and the proposed improvements, floodplain crossings are unavoidable if the project is to improve the efficiency of railroad (freight) and vehicular travel in the metropolitan area.

Section 2 of the Tier 1 Draft and Final EIS discusses the roadway alternatives investigated as part of the project. The preferred alternative from the Tier 1 FEIS, with the Tier 2 Segment 3 modifications described in Section 2 of this EA, is the only practicable alternative based on engineering evaluation, agency coordination, public input and consideration of overall social, economic, and environmental impacts. The floodplains within the project area were defined early in the Tier 1 study process, and amended with recent FEMA remapping of the floodplain. The proposed project has been designed to avoid or minimize floodplain crossings where practicable. The design of the crossings will conform to state and local regulations to protect the floodplain and will not require revisions to the regulatory floodplain. As an access-controlled highway, the project would not create incompatible floodplain development.

3.8 Water Quality

Surface water quality is protected through several acts and regulations. Section 303(d) of the Clean Water Act requires states, territories, and authorized tribes to identify waters for which existing required pollution controls are not sufficiently stringent to maintain applicable water quality standards and to establish total maximum daily loads for the pollutants impairing those waters (33 USC 1251 et seq.). Section 305(b) of the Clean Water Act requires states to submit a biannual report to the U.S. Environmental Protection Agency (USEPA) regarding the overall water quality status within their state and the degree to which water bodies support their designated uses (33 USC 1315). The information maintained by states in accordance with Section 303(d) serves as part of the Section 305(b) water quality report.

Chapter 61 of the Iowa Administrative Code (Water Quality Standards) classifies uses of the surface waters and identifies criteria to be used to protect these waters and meet the requirements of Section 303(d) (Iowa Administrative Code Chapter 61).

The CBIS Improvements Project was evaluated in Tier 1 for its potential to affect surface water and groundwater as well as water quality, wastewater treatment facilities, potable water intakes, and water treatment facilities downstream of the project. Water quality issues related to surface water were evaluated primarily by considering runoff and siltation impacts during long-term use of the transportation facility. Potential issues concerning decreased groundwater recharge and effects on potable water intake and wastewater discharge were also considered. Mosquito Creek is the focus of the Tier 2 water quality analysis because it

receives drainage from some of the project's other waters of the U.S., it is the only project-area water body for which Iowa DNR monitors water quality, and Iowa DNR has given it a designated use status. The project's impact on private wells is also discussed. Schildberg pond within the I-80/I-29 East System interchange is not considered a water of the U.S. and is, therefore, not discussed in this section.

3.8.1 Existing Conditions

Mosquito Creek is a shallow, perennial, warm-water stream that extends along the east edge of Segment 3 (Figure 3-7). As a warm-water stream, Mosquito Creek is capable of supporting limited aquatic life populations, such as minnows and other non-game fish. Mosquito Creek enters the Segment 3 study area just east of the Madison Avenue interchange, where it is crossed by two I-80 bridges. The creek continues south, meandering slightly to the west under a bridge at Harry Langdon Boulevard. From Harry Langdon Boulevard past the south I-29 terminus of the Segment 3 Project, it is channelized with levees on both sides.

There are two notable point sources in the general study area where stormwater runoff empties into Mosquito Creek: Drainage Laterals 5 and 5a. Drainage Lateral 5 empties into the creek south of the BP Terminal. The lateral receives runoff at various locations along its length from the industrial development along 29th Avenue and the I-80/I-29 East System interchange. It also receives runoff, through Drainage Lateral 5a, from a 48-inch pipe parallel to South Expressway that collects runoff from South Expressway, the Lake Manawa Power Centre, and other nearby commercial properties. On the east side of Segment 3, in the Madison Avenue interchange area, a 60-inch storm sewer empties into Mosquito Creek. The pipe is fed by a system of storm sewers draining a 352-acre urban area north of I-80. The 60-inch storm sewer is equipped with a flap gate to keep water from backing up into the storm sewer system when the water level in Mosquito Creek is high. The I-29 bridges that cross Mosquito Creek adjacent to the BP Terminal and the I-80 bridges that cross the creek near the Mall of the Bluffs also drain directly into the creek.

The Iowa DNR uses various numeric and narrative water quality criteria to assess the level of support (attainment) of each applicable designated use (aquatic life, fish consumption, drinking water and overall use support) in Iowa streams. Each assessed use receives a use-support rating of full support, partial support, or nonsupport. According to USEPA's National Assessment Database, Mosquito Creek's aquatic life and overall use designated uses are partially supported. Iowa DNR has not assessed the creek's drinking water and fish consumption designated uses. Water bodies that attain full support are considered to be unimpaired; those that attain partial support or nonsupport are considered to be impaired. Because of Mosquito Creek's partial support rating for overall use and aquatic life uses, Iowa DNR classifies it as impaired under Section 303(d) of the Clean Water Act.

According to USEPA's National Assessment Database, the causes of Mosquito Creek's impairments are habitat alterations and organic enrichment/low dissolved oxygen levels. The database identifies probable sources contributing to Mosquito Creek's impairments as agriculture, channelization and municipal point source discharges.

As noted in the Tier 1 Draft EIS, private groundwater wells in the Omaha/Council Bluffs metropolitan area are typically shallow (less than 100 feet deep) and associated with agricultural and residential uses at properties outside the city limits. A database of

registered private wells was accessed to determine wells located in the Segment 3 study area (Iowa DNR 2000). Although the database identified a few wells in the study area, a field survey was conducted, and no potable or agricultural wells were located within the preliminary impact area. Groundwater monitoring wells were identified in the regulated materials survey and are discussed in Section 3.12.1.

3.8.2 Impacts

3.8.2.1 No-Build Alternative

The No-Build Alternative includes capacity expansion to the existing network and construction of new roads in and adjacent to Segment 3. While some of these roads could contribute runoff to Mosquito Creek, the water quality impact would be expected to be minor.

Under the No-Build Alternative, stormwater drainage into Mosquito Creek from Drainage Lateral 5 (which also receives input from Drainage Lateral 5a) and the storm sewer in the Madison Avenue interchange would continue. The I-29 and I-80 bridge crossings would continue to drain into Mosquito Creek, and the probable sources contributing to the impaired water quality status of Mosquito Creek, identified in USEPA's National Assessment database, would likely continue. It is reasonable to assume that with the No-Build Alternative, Mosquito Creek's water quality would be neither further degraded nor improved.

3.8.2.2 Revised Build Alternative B

Water quality impacts generally are related to the potential for increased sedimentation, siltation, and suspended solids loads in Mosquito Creek from the construction, operation, and maintenance of the Interstate system and connecting road network and railroad improvements in Segment 3. Although the focus of this subsection is potential impacts to Mosquito Creek's water quality, impacts on Drainage Lateral 5 are also discussed because it drains into the creek. The project's potential construction, operation, and maintenance impacts are discussed below.

Construction Impacts. Typical operations associated with roadway and railroad bed construction involve clearing, grading, filling, and excavation. These activities increase the erosion potential of surface soils because of the reduction in vegetative cover and increased impervious areas resulting from compaction of soil by heavy equipment.

During construction of the I-29, U.S. 275/IA 92, and I-80 bridges over Mosquito Creek, construction equipment and material likely would be placed in the stream channel during demolition of the existing structures and construction of the proposed structures. Equipment would need to be stationed in the stream channel for pile driving and pier construction operations. Minor channel shaping may occur upstream and downstream of the I-29 bridges to accommodate the proposed structure configuration. Construction of new railroad beds at the south end of the project will not require new bridges over Mosquito Creek or any in-stream work. The proposed railroad improvements east of Harry Langdon Boulevard are located north of Mosquito Creek in an established railroad corridor and would not affect Mosquito Creek.

Construction within the I-80/I-29 East System interchange would require that construction equipment and material be placed in the channel of Drainage Lateral 5 during realigning of

the channel, demolition of the box culverts, and construction of the proposed culverts. A temporary culvert or channel may be needed to divert the stream during construction of new box culverts. Installation would require excavation, riprap, and earthwork in the channel. The proposed box culverts may require some minor channel excavation. Minor channel excavation is expected at locations where the box culverts would be extended.

The major short-term water quality impacts due to construction are increases in turbidity and sedimentation resulting from erosion of disturbed areas and in-stream work. The water levels in both water bodies while work is performed would affect the amount of sediment transported downstream. The potential increase in turbidity and sedimentation from in-stream work would likely be less in Drainage Lateral 5 (an intermittent stream) than in Mosquito Creek (a perennial stream). With mitigation measures normally employed by the Iowa DOT and adherence to the provisions of a future NPDES permit or permits (see Section 3.8.3), the in-stream work and construction activities adjacent to Mosquito Creek would not be expected to adversely affect short- or long-term water quality.

Operational Impacts. Operational impacts of the project on water quality result from stormwater runoff from highway surfaces, bridge decks, median areas, and adjoining rights of way. According to the drainage study for Segment 3 Council Bluffs Interstate System (CH2M HILL 2008), the design of the I-80/I-29 East System interchange at the time of the study would more than double the highway pavement area as compared to the existing interchange. Nearly the same can be expected of the current Revised Build Alternative B design. The increase in impervious area would increase stormwater runoff volumes and may increase in-stream erosion in Mosquito Creek. The runoff carries pollutants that have accumulated as a result of roadway use. The primary highway runoff components are suspended sediments (pavement wear and dirt), lead (tire filler), zinc (tire filler, motor oil stabilizers), copper (metal platings, brake linings), and petroleum (gasoline, antifreeze, hydraulic fluids).

Throughout the mid-1980s, the FHWA conducted nationwide studies to determine highway runoff constituents, amounts relative to roadway types and traffic conditions, and the potential impacts to surface water resources (FHWA 1990). FHWA's research concluded that pollutants in highway runoff are not present in amounts sufficient to threaten surface water or groundwater where average daily traffic volumes are below 30,000. Forecast traffic volumes for the No-Build and Build Alternatives in the design year (2030) are above that threshold. However, adverse impacts to Mosquito Creek's water quality are not expected with the Build Alternative, despite its associated increase in impervious area, because of features incorporated into the roadway design to reduce stormwater runoff loadings. See subsection 3.8.3, Avoidance, Minimization, and Mitigation, for additional information.

The application of deicing salt may affect water quality in Mosquito Creek. Deicing salt can affect water quality by increasing chloride levels in runoff and snowmelt. Impacts are associated with the movement of salt from the roadway into Mosquito Creek and Drainage Lateral 5, and into other drainage ditches that feed those water bodies. The proposed road improvements would increase the number of lane miles in the project area, thereby increasing the total salt loading over current levels. This could increase the delivery of sodium chloride ions to Mosquito Creek. However, recent research supports a determination that no significant water quality impacts are expected from deicing salt solution entering the creek. The Wisconsin DOT has an ongoing monitoring program that began in 1970. Data from streams, groundwater wells, and soils have been collected and analyzed from several sites

throughout the state representing various climatic conditions, soil types, and vegetation cover types. The latest progress report—*Investigation of Road Salt Content of Soil, Water, and Vegetation Adjacent to Highways in Wisconsin* (Patenaude 1996)—indicates there has been no substantial accumulation of chlorides. In permanent streams, chloride values generally have differed by less than 10 parts per million for upstream and downstream values. Studies of sodium chloride concentrations originating from highway runoff by the U.S. Geological Survey (1995) have shown that the additional input of sodium chloride ions from deicing salts would be offset by a proportional increase in runoff for dilution.

Rail projects can affect water quality by increasing runoff, generating wastewater, or altering surface or subsurface drainage patterns (*Guidance on the Federal Railroad Administration Categorical Exclusion Worksheet*).[3] Like the proposed roadway improvements, railroad improvements are not expected to adversely affect water quality in Mosquito Creek. Railroad beds are narrower and more pervious than the proposed highway improvements and they have drainage swales adjacent to the railroad beds, all factors that mitigate potential water quality impacts.

Groundwater / Private Wells No measurable change to the available groundwater supply is expected under Revised Build Alternative B. The additional impervious area associated with the Segment 3 project represents a negligible reduction in recharge area. The Build Alternative is not expected to adversely affect groundwater quality within the preliminary area of impact. No potable or agricultural groundwater wells were located within the preliminary area of impact, and consequently no impacts to potable wells are projected to occur. Impacts to groundwater monitoring wells are addressed in Section 3.12.2.2.

3.8.3 Avoidance, Minimization, and Mitigation

To minimize construction-related water quality impacts, construction in or near Mosquito Creek will be performed in accordance with the state and local regulations. The Iowa DOT will obtain an NPDES permit (per Section 402 of the Clean Water Act) before the start of construction for the interim project. If there is a delay between the interim and ultimate projects, another NPDES permit would likely be needed and also acquired by Iowa DOT. The NPDES Stormwater program requires operators of construction sites one acre or larger to obtain authorization to discharge stormwater under an NPDES construction stormwater permit. As part of the permitting process, Iowa DOT will prepare an SWPPP that describes the range of erosion control measures (best management practices) to be implemented on the project. The selected contractor will expand the SWPPP to apply its specific construction plans and operations. The Iowa DOT, in coordination with the Iowa DNR, will develop a best management practices approach to protect the adjacent environment from sedimentation and construction material pollutants discharged from construction activities.

In accordance with the SWPPP developed under the NPDES permit, erosion control devices will be installed before the onset of construction work that is likely to cause erosion. Construction at Mosquito Creek locations will be conducted during periods of low or normal flow, avoiding work to the extent possible between March 15 and June 15. Stream flows will not be interrupted, and a culvert will be put in place where temporary in-channel fill can impound water. Temporary and permanent erosion control methods could include silt fences,

[3] http://www.environment.fhwa.dot.gov/histpres/index.asp

retention ponds, detention basins, interceptor ditches, seeding, sodding, installing riprap on exposed embankments, installing erosion mats, and mulching. Disturbed areas will be graded and provided with temporary seeding as soon as possible to minimize erosion.

The Iowa DOT will design stormwater detention basins to be constructed in the I-80/I-29 overlap section and the I-80/I-29 East System interchange. The basins will serve a dual function. Their primary purpose is to minimize increased peak flows and runoff volumes through downstream drainage structures caused by the substantial increase in impervious area. Their secondary purpose is to minimize water quality impacts. Detention basins roughly 2 feet deep are planned in the infields of both South Expressway loop ramps and within the I-80/I-29 East System interchange adjacent to Drainage Lateral 5 (Figure 3-10). By temporarily holding stormwater, the detention basins will allow some runoff to seep into the ground. They also will allow some sediment in the runoff to settle out before the runoff is conveyed to the South Expressway storm sewer system and Drainage Lateral 5. In addition to the detention basins, Iowa DOT is also proposing to maintain part of the I-29 southbound embankment and part of the I-29 northbound to I-80 eastbound ramp embankment to maintain existing discharge points in high flow events.

3.9 Threatened or Endangered Species

Threatened and endangered species are protected under the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.). The Endangered Species Act provides for the protection of animal and plant species that have been determined to be in population decline and are in jeopardy of becoming extinct. USFWS has the authority of the federal government to administer the protection of such species. At the state level, the Iowa DNR has jurisdiction over protected species and rare natural communities.

During the Tier 1 analysis of threatened and endangered species, information provided by federal and state agencies identified 11 threatened and endangered species that may exist in the CBIS study area. Of those, 9 had the potential to be found in Iowa. American ginseng and the sturgeon chub are protected species in Nebraska, but are not listed in Iowa or by USFWS. Agency coordination was supplemented with limited windshield surveys and preliminary desktop surveys during the Tier 1 analysis.

The Tier 2 analysis involved intensive pedestrian field surveys in 2005 and 2008, to document the presence of potential protected species. The first round of field surveys was conducted on July 7 and 8, 2005, in the Segment 1, 2, and 3 study areas. The field surveys reviewed the Tier 1 area of potential impact because the preliminary impact area for Tier 2 had not yet been determined. The findings and conclusions of the field surveys were documented in a Threatened and Endangered Species Survey Technical Memorandum (CH2M HILL 2006). The inclusion of railroad corridor consolidation improvements as part of the project concept expanded the project study area, and two other field surveys were conducted in 2008 and documented in memorandum addenda (CH2M HILL 2008 and HDR 2009).

3.9.1 Existing Conditions

The 2005 Tier 2 field surveys identified four habitat areas with part of their boundaries within the Segment 3 study area (Figure 3-11). Those areas are described below. Table 3-10 indicates the species evaluated, the federal and state status of the species at the time of the survey, the

habitat areas, and the potential habitat in each area. Although potential habitat was identified, no threatened and endangered species were detected during the field surveys.

3.9.1.1 Area 3A

Area 3A is a wet roadside ditch along the east side of IA 192 and north of I-80/I-29. Wet parts of Area 3A are dominated by emergent marsh. The edges of Area 3A were searched for the prairie bush clover and the western prairie fringed orchid, but neither was found. The disturbance history of the ditch and adjacent area would limit the habitat suitability for these species. The habitat also was determined to not be suitable for the other seven subject species.

3.9.1.2 Area 3B

Area 3B is a strip of disturbed, submature, second growth, floodplain forest adjacent to Drainage Lateral 5 northeast of the I-80/I-29 East System interchange. It was searched for prairie bush clover and western prairie fringed orchid, but neither was located. Severe disturbance would preclude the presence of suitable habitat for these species. The small size of the tract and the lack of dead trees with peeling bark preclude suitability for Indiana bat summer habitat. Given the abundance of larger, more mature forests nearer the Missouri River, Area 3B does not provide suitable loafing habitat for the bald eagle. The habitat also was determined to not be suitable for the other five subject species in Table 3-10.

TABLE 3-10
2005 Threatened and Endangered Species Habitat Areas

Species[a]	3A	3B	3C	3D
Prairie bush clover (F-TH, IA-TH)	None	None	None	None
Western prairie fringed orchid (F-TH, IA-TH)	None	None	None	None
Piping plover (F-TH, IA-EN)	None	None	None	None
Bald eagle[b] (F-TH, IA-EN)	None	None	None	None
Interior least tern (F-EN, IA-EN)	None	None	None	None
Indiana bat (F-EN, IA-EN)	None	None	None	None
Eastern massasauga rattlesnake (F-CAN, IA-EN)	None	None	Potential[c]	None
Pallid sturgeon (F-EN, IA-EN)	None	None	None	None
Lake sturgeon (F-NL, IA-EN)	None	None	None	None

[a] Species status codes are defined as follows: F= federal; IA = Iowa; EN = endangered; TH = threatened; CAN = candidate; NL = not listed

[b] The bald eagle was delisted as a federal species subsequent to the 2005 survey and delisted as an Iowa endangered species subsequent to the 2008 surveys.

[c] Subsequent to the survey, the area was disturbed by construction of the Metro Crossing shopping center. Consequently, this area no longer contains suitable habitat for the rattlesnake.

"None" means that despite an intensive pedestrian survey, no potential habitat was found.

3.9.1.3 Area 3C

Area 3C is a large area of fallow land in the southwest quadrant of the U.S. 275/IA 92 interchange. Area 3C is a mosaic of forbland, nonnative grassland, emergent wetland, and wet shrubland. Area 3C was accessed for a pedestrian survey in November 2005. Vegetation

within Area 3C had been mowed quite short. Despite the mowing, the habitat types and many of the constituent plant species were still identifiable. Slightly depressional areas on the landscape were dominated by water smartweed. Slightly elevated areas were dominated by yellow foxtail grass (*Setaria glauca*), giant foxtail (*Setaria faberi*), and smooth brome (*Bromus inermis*). Vegetation observed in Area 3C is typical of old fields, areas that were previously row-cropped. Aerial photographs of Area 3C show evidence of subsurface tiling, and thus past row cropping.

Given the abundance of emergent wetland, the area could provide habitat for the eastern massasauga rattlesnake. James Christiansen, herpetologist with Drake University, reviewed the aerial photos of Area 3C and deemed it unlikely that the eastern massasauga rattlesnake would occur there, given the disturbance history of the area (Christiansen 2005). Mowing of Area 3C revealed several depressional muddy areas that were dry during the November 2005 field visit. The closely mowed vegetation provided good survey conditions for crayfish chimneys, a feature that has been documented to provide hibernation habitat for the eastern massasauga rattlesnake. During the pedestrian survey of Area 3C, only one crayfish chimney was found (near the southwestern most extent of the polygon). Given the likely past agricultural disturbance of Area 3C, and the disturbance-tolerant assemblage of plant species observed there, the habitat would not likely provide refuge for the western prairie fringed orchid. Area 3C does not provide suitable habitat for the prairie bush clover. The habitat also was determined unsuitable for the other six subject species. Sometime after the survey, the area was disturbed by construction of the Metro Crossing shopping center. Consequently, the area no longer contains suitable habitat for the rattlesnake.

3.9.1.4 Area 3D

Area 3D is located near the southernmost extent of the study area along I-29. Area 3D is a moist to wet parcel dominated by a mosaic of emergent marsh, sedge meadow, wet meadow, and forbland. Area 3D was searched for the western prairie fringed orchid, prairie bush clover, and the eastern massasauga rattlesnake but none of these species was observed. Though the site is likely wet most years, occasionally it may be dry enough to crop. Consequently, the occasional cropping of Area 3D would likely eliminate suitable habitat for the prairie bush clover, western prairie fringed orchid, and the eastern massasauga rattlesnake. The habitat was determined to not be suitable for the other six subject species.

The summer 2008 Tier 2 field survey evaluated seven habitat areas within the expanded study area associated with the railroad corridor consolidation alternatives (Figure 3-11). These habitat areas are described below. Table 3-11 indicates the species evaluated, the federal and state status of the species at the time of the survey,[4] the habitat areas, and the potential habitat in each area. Although potential habitat was identified, no threatened and endangered species were detected during the field surveys.

It should be noted that the number of species included in the 2008 field surveys is different than the 2005 field survey which included Segments 1, 2, and 3. The piping plover, interior least tern, pallid sturgeon, and lake sturgeon, species associated with the Missouri River, which is not within Segment 3, were not considered as part of the 2008 field work.

[4] The bald eagle was delisted as a federal species subsequent to the 2005 survey and delisted as an Iowa endangered species subsequent to the 2008 surveys.

TABLE 3-11
2008 Threatened and Endangered Species Habitat Areas

Species	3E	3F	3G	3H	3I	3J	3K	3L
Prairie bush clover (F-TH, IA-TH)	none	none	none[a]	none	none	none	none	none
Western prairie fringed orchid (F-TH, IA-TH)	none	none	none	none	none	none	none	none
Bald eagle (F-Delisted, IA-EN)	none	none	potential (perching)	none	none	none	none	none
Indiana bat (F-EN, IA-EN)	none	none	none	none	none	none	none	none
Eastern massasauga rattlesnake (F-CAN, IA-EN)	none	none	None	none	potential (marginal)	none	none	potential (marginal)

[a] Species status codes are defined as follows: F = federal, IA=Iowa, EN = endangered, TH = threatened, CAN= candidate, NL=not listed

3.9.1.5 Area 3E

Area 3E is bounded on the south by IA 92, on the northeast by the CBEC railroad, and on the west by I-29. Area 3E is mostly planted in corn with several scattered areas of wet meadow, nonnative grassland, and forbland near Mosquito Creek and the CBEC railroad. Most of Area 3E is intensively row-cropped, and parts have been disturbed as a result of channelizing Mosquito Creek. As such, Area 3E is highly disturbed and provides no habitat for the western prairie fringed orchid, prairie bush clover, or eastern massasauga rattlesnake. Area 3E has no forested areas; therefore it provides no summer habitat for the Indiana bat or perching habitat for the bald eagle.

3.9.1.6 Area 3F

Area 3F is bounded on the southwest by the CBEC railroad, on the east by Mosquito Creek, and on the north, in part, by the BNSF/Iowa Interstate railroad. Much of Area 3F is planted in beans, though parts along the north side of the CBEC railroad and the west side of Mosquito Creek are nonnative grassland, forbland, and shrubland. Most of Area 3F is intensively row-cropped, and parts have been disturbed as a result of channelizing Mosquito Creek. As such, Area 3F is highly disturbed and provides no habitat for the western prairie fringed orchid, prairie bush clover, or eastern massasauga rattlesnake. Area 3F has a forested fenceline near the north side of the CBEC railroad tracks, but the trees are young, sparse, and unsuitable as perching habitat for bald eagles or as summer habitat for the Indiana bat.

3.9.1.7 Area 3G

Area 3G is bounded on the north by Woodbury Avenue and the BNSF/Iowa Interstate railroad, and on the east by Mosquito Creek. Area 3G is partly forbland, nonnative grassland, and railroad ballast near the tracks and disturbed, second growth, submature deciduous forest in areas more distant from the railroad tracks and the west bank of Mosquito Creek. There is no habitat suitable for the western prairie fringed orchid, prairie bush clover, or eastern massasauga rattlesnake in Area 3G. Forested areas within Area 3G are adjacent to Mosquito Creek, but they are too small to support summer habitat for the Indiana bat. There are roughly 20 acres of forested land within 0.5 mile of and including Area 3G. The *Indiana Bat*

Summer Habitat Documentation Form requires that 75 acres of forested land be present within 0.5 mile of the subject site as the first of several criteria required for documenting summer habitat for the Indiana bat. Bald eagles might perch in trees along Mosquito Creek, adjacent to the eastern edge of Area 3G. Suitable bald eagle perching trees typically are supercanopy trees that have some large leafless branches or are partially or completely dead. No such trees were observed in Area 3G nor were any bald eagles seen during fieldwork.

3.9.1.8 Area 3H

Area 3H lies on both sides of IA 92 between the CBEC railroad on the west and Harry Langdon Boulevard on the east. The part of Area 3H that lies south of IA 92 is mostly forbland and nonnative grassland on the steep embankment of IA 92 and mowed lawn in flatter areas. The part of Area 3H that lies north of IA 92 is partly planted in beans; parts at the base of the IA 92 embankment and riparian areas along Mosquito Creek are forested with disturbed, second growth, young deciduous forest. Area 3H is small and highly disturbed and does not provide habitat for any listed species.

3.9.1.9 Area 3I

Area 3I is immediately adjacent to a long loop of the CBEC railroad bounded on the north by IA 92 and on the southwest by I-29. Parts of Area 3I are planted in beans, and ditches at the base of the railroad embankment are wet meadow, emergent marsh, nonnative grassland, and forbland. Patches of young, second growth, disturbed deciduous forest are scattered throughout Area 3I. Area 3I has no potential habitat for the western prairie fringed orchid or prairie bush clover. Wet ditches at the base of the railroad embankment in conjunction with several adjacent fallow fields may provide marginal habitat for the eastern massasauga rattlesnake. Area 3I does not provide any habitat for the Indiana bat or the bald eagle.

3.9.1.10 Area 3J

Area 3J is a linear strip of land running near the eastern side of I-29 and extending northward to near Iowa 92. Area 3J is nearly completely planted in soybeans. The plant species list developed for Area 3J includes soybeans but also includes wet meadow, forbland, shrubland, and grassland plant species observed closer to the east edge of I-29. Area 3J is intensively row-cropped with a rotation of beans and corn. There is no suitable habitat for any listed species within Area 3J.

3.9.1.11 Area 3K

Area 3K is adjacent to the west side of Mosquito Creek near petroleum tank farms southeast of the intersection of Iowa 92 and U.S. Highway 275. Area 3K is a mosaic of nonnative grassland, forbland, and wet meadow. Area 3K is highly disturbed as a result of channelization of Mosquito Creek, railroad construction, and bike trail construction. Area 3K does not provide any habitat suitable for listed species.

3.9.1.12 Area 3L

The third and final Tier 2 field survey was conducted on November 26, 2008, to include an area surrounding the SIRE service railroad track. The area was evaluated for the same five threatened and endangered species and their habitat that were the subject of the summer 2008 threatened and endangered species studies.

As most of the SIRE study area is regularly cultivated for row crop production, few locations within the SIRE study area required evaluation for potential habitat of threatened and endangered species. The SIRE study area basically is bisected (east/west) by Mosquito Creek, which consists of a channelized drainage that contains levees on both its banks for its entire reach within the study area. The Mosquito Creek levees are managed to deter the establishment of woody vegetation; therefore, no viable riparian habitat exists within the study area. A few PEM wetlands exist near the SIRE service railroad track connection with the BNSF Railway track in the eastern extreme of the SIRE study area. Another PEM wetland exists on the BP/Amoco property in the northwest corner of the SIRE study area.

No prairie bush clover, bald eagle, or Indiana bat individuals were observed during the field survey. Furthermore, as the existing conditions, within the SIRE study area, contain no dry to mesic prairie or wooded areas, it was determined that no suitable habitat exists for the prairie bush clover, bald eagle, or Indiana bat.

No eastern massasauga rattlesnake individuals were observed during the field survey. Although study area habitation by the eastern massasauga rattlesnake is unlikely, the PEM wetlands in the SIRE Study Area constitute potential habitat for this species. However, the developed or actively cultivated areas adjacent to the wetlands make it unlikely that the eastern massasauga rattlesnake would occur in the SIRE study area. Additionally, the lack of transitional areas between the seasonally flooded wetlands and the adjacent cultivated agricultural areas is not ideal for eastern massasauga rattlesnake habitation.

The same history of disturbance and lack of transitional areas mean that the PEM wetlands in the SIRE study area do not provide potential habitat for the western prairie fringed orchid.

3.9.2 Impacts

3.9.2.1 No-Build Alternative

The No-Build Alternative would have no effect on habitat potentially suitable for threatened and endangered species. Ongoing development, such as that associated with the construction occurring at the Metro Crossing Shopping Center (which affected Area 3C), could continue to disturb potential threatened and endangered species habitat.

3.9.2.2 Revised Build Alternative B

All of the 12 potential threatened and endangered species habitat areas identified in Segment 3 are within the area of preliminary impact of Revised Build Alternative B. As noted, no protected species were located in the habitat areas within the project's area of preliminary impact, but habitat potentially suitable for the eastern massasauga rattlesnake was found in Areas 3C, 3I, and the SIRE study area (3L). In the time since the threatened and endangered species survey in 2005, Area 3C has been almost entirely disturbed during construction of the Metro Crossing Shopping Center. Potential perching habitat for the bald eagle was found in Area 3G, but the bald eagle is no longer a listed species. Habitat area 3I, which contains potential (marginal) habitat for the eastern massasauga rattlesnake, will not be affected by Revised Build Alternative B. Only habitat area 3L, which contains potential (marginal) habitat for the eastern massasauga rattlesnake, will be affected. Revised Build Alternative B will affect about 1.7 acres of the 3.7-acre habitat area 3L. No suitable habitat was identified in the remaining habitat areas for the protected species that could occur in Segment 3.

As a result of the 2005 survey and 2006 technical memorandum for Segments 1, 2, and 3, Iowa DOT prepared a determination of effect for threatened and endangered species. The determination of effect reported that no threatened and endangered species were detected in any of the segments, and no potential habitat was detected in Segment 3 for prairie bush clover, piping plover, bald eagle, Indiana bat, and interior least tern. Consequently, Revised Build Alternative B for Segment 3 will have no effects, direct or indirect, on those species. The determination of effect, which was prepared before the Metro Crossing Shopping Center was constructed, concluded that the project would have an insignificant impact on the eastern massasauga rattlesnake, in part because of the suitable habitat present on the Metro Crossing property. As noted, the construction of the shopping center has eliminated nearly all the suitable rattlesnake habitat on the property.

The determination of effect concluded that the Build Alternative (Build Alternative B) would have no indirect effects on listed species or on their preferred habitats. Appendix A contains letters from the USFWS and Iowa DNR concurring with Iowa DOT's 2006 effect determinations.

The inclusion of railroad corridor consolidation improvements as part of the project concept required Iowa DOT to reinitiate consultation with the USFWS for threatened and endangered species covering the habitat survey areas in the expanded study area. The determination of effect from the 2010 biological evaluation reported that no threatened and endangered species were detected and no potential habitat was detected for prairie bush clover, western prairie fringed orchid, and Indiana bat. Although potential habitat was found for the bald eagle, it is not listed as a federal or state threatened or endangered species, but it is still protected as a migratory bird and also under the Bald and Golden Eagle Protection Act. Revised Build Alternative B will have no effects, direct or indirect, on prairie bush clover, western prairie fringed orchid, and Indiana bat.

The determination of effect noted potential habitat for the eastern massasauga rattlesnake is present within the study area. Consequently, a determination of "May Affect–Not Likely to Adversely Affect" was proposed for the eastern massasauga rattlesnake, and that Revised Build Alternative B would have no indirect effects on the eastern massasauga rattlesnake or its habitat.

Iowa DOT's letter to Iowa DNR indicating that the proposed project is not likely to adversely affect federally or state-listed species or result in the destruction or adverse modification of federally designated critical habitat is found in Appendix A. A letter from the Iowa DNR concurring with Iowa DOT's direct and indirect impact assessments on the 2010 Determination of Effect forms is found in Appendix A.

3.9.3 Avoidance, Minimization, and Mitigation

Revised Build Alternative B is not projected to adversely affect threatened and endangered species or their habitat, so no mitigation is necessary or proposed.

3.10 Cultural Resources

Cultural resources include historic and archaeological places, items, or events considered important to a culture, community, tradition, religion, or science. Historic and archaeological sites are locations where human activity measurably altered the earth or left deposits of physical or biological remains. Section 106 of the National Historic Preservation Act of 1966

(16 USC 470f) requires federal agencies to determine whether their actions have adverse impacts on historic properties (any historic structure, archaeological site, or other property listed on or eligible for listing on the National Register of Historic Places (NRHP)) and to take steps to avoid these resources, minimize impacts, or mitigate impacts.

During Tier 1, Tallgrass Historians L.C. conducted a reconnaissance survey within the CBIS study area (including Segment 3) for potential historic properties in Iowa and Nebraska (Nash 2003) and another for potential archaeological resources in Iowa (Rogers 2003).

During Tier 2, a historical/architectural intensive-level survey was conducted (Nash 2006) that included a detailed investigation of properties within and adjacent to the Tier 1 area of potential impact of Segment 3. The Tier 1 area of potential impact was considered to be the Area of Potential Effect (APE) for this Tier 2 study. A Phase 1 Archaeological investigation of Segment 3 was also conducted during Tier 2 (Rogers 2006).

The inclusion of railroad corridor consolidation improvements as part of the project concept resulted in supplements being prepared to the 2006 historical/architectural intensive-level survey (Nash 2008a, Nash 2008b) and the 2006 archaeological survey (Rogers 2008, Rogers 2010). The results of the 2006, 2008, and 2010 cultural resource surveys are reported below.

3.10.1 Existing Conditions

3.10.1.1 Historic Properties

In 2006, 106 properties within Segment 3 were evaluated. Some sites included multiple individual resources. Twenty-six properties had at least one principal resource that appeared to be 40 years of age or older. Another 80 properties were modern and appeared to be less than 40 years old. The Interstate system in Segment 3 was constructed in the late 1960s and into the early 1970s and has been treated as a modern property. No sites within the APE were listed on the NRHP, and no properties within Segment 3 were found to have the level of significance or historical integrity for eligibility for the NRHP (Nash 2006).

In 2008, 51 buildings and structures were identified in the expanded study area. Four National Register-eligible properties were identified as well as one building already listed on the National Register (Nash 2008a, Nash 2008b). See Figure 3-12.

National Register Listed Property

78-01714 Chicago, Rock Island & Pacific Railroad Passenger Depot, located at 1512 S. Main Street (NRHP listed, 1995).

National Register Eligible Properties

78-02083 Farmers' Terminal Elevator (Bartlett grain elevator), located at 2600 4th Street. Eligible under Criteria A and C.

78-02084 Wabash Freight House (Iowa Interstate Railroad property). Eligible under Criterion A.

78-02099 East South Omaha Bridge Road bridge, over Mosquito Creek. Eligible under Criterion C.

78-02100 CB&Q (Burlington) RR plate girder bridge, over Mosquito Creek. Eligible under Criterion C.

3.10.1.2 Archaeological Resources

The 2006 Phase I archaeological investigation identified nine new sites and adjusted the boundaries of one known site, the former Council Bluffs Airport, southwest of the I-80/I-29 East System interchange. No archaeological sites listed on the NRHP were within the APE. The 2006 Phase I report noted that if the part of the former Council Bluffs Airport outside the APE were to be affected, the foundation remains of the airport buildings should be evaluated to the Phase I level. Of the nine new sites, only one is potentially eligible and warrants Phase II testing if it were to be disturbed. The prehistoric habitation site 13PW193, which may be eligible for listing on the NRHP under Criterion D, is located east of the I-80/I-29 East System interchange and south of I-80. The remaining sites were concluded to be ineligible and warrant no further investigation (Rogers 2006).

The 2008 investigation of the railroad corridor consolidation study area did not identify any new archaeological sites, but did update two previously recorded sites. No further archeological investigation appears warranted for the current project (Rogers 2008). The 2010 report did not identify any new archaeological sites (Rogers 2010).

3.10.2 Impacts

3.10.2.1 No-Build Alternative

The historical and archaeological investigations were limited to the Segment 3 APE. Therefore, it is not known whether other projects defined in the No-Build Alternative would affect historic or archaeological resources. If the Interstate improvements are not constructed, however, other projects may be needed elsewhere in the Council Bluffs area to accommodate the projected traffic increases. Consequently, future projects have the potential to cause unknown impacts on cultural resources.

3.10.2.2 Revised Build Alternative B

Historic Properties. The 2006 historical/architectural intensive-level survey concluded that Segment 3 contained no properties on or eligible for listing on the NRHP. On August 16, 2006, Iowa DOT submitted the historical/architectural survey report and a determination of no historic properties affected for Segment 3 to Iowa SHPO. On September 5, 2006, the Iowa SHPO historian concurred with the finding that no historic properties in Iowa would be affected by the Build Alternative (see Appendix A for concurrence letter), which was before the Segment 3 Project was expanded to include railroad corridor consolidation.

The 2008 historical/architectural intensive-level survey concluded that the expanded Segment 3 study area contained one NRHP listed property and four NHRP eligible properties. On January 28, 2009, Iowa DOT submitted the historical/architectural survey report to Iowa SHPO and requested SHPO's concurrence on the eligibility findings of the 2008 survey. On March 6, 2009, the SHPO historian concurred with the eligibility findings of the survey (see Appendix A for concurrence letter).

On October 4, 2010, Iowa DOT submitted a determination of no historic properties adversely affected for Segment 3 to Iowa SHPO. On October 21, 2010, the SHPO concurred with Iowa DOT's finding that no historic properties in Segment 3 would be adversely affected by Revised Build Alternative B (see Appendix A for concurrence letter). Consequently, the Segment 3 Project will not have significant impacts on historic properties.

Archaeological Sites. As noted in Section 3.10.1.2, the surveys identified only one site recommended eligible for listing on the NRHP; no NRHP-listed archaeological sites exist within the APE. The prehistoric habitation site east of the I-80/I-29 East System interchange is located outside the existing right-of-way and would be avoided by I-80 improvements. On May 13, 2006, Iowa DOT sent a letter to the SHPO seeking concurrence that no archaeological properties would be affected by the Segment 3 project in Iowa, and the Iowa SHPO archaeologist concurred with the findings on June 16, 2006 (see Appendix A for letter).

On February 4, 2009, Iowa DOT submitted the 2008 Supplemental Phase I Archaeological Investigation and a determination of no historic properties affected for Segment 3 to the Iowa SHPO. The Iowa SHPO archaeologist concurred with the findings on February 13, 2009 (see Appendix A for concurrence letter).

On September 16, 2010, Iowa DOT submitted the 2010 Supplemental Phase I Archaeological Investigation (for the SIRE study area) and a determination of no historic properties affected for Segment 3 to the Iowa SHPO. The Iowa SHPO archaeologist concurred with the findings on September 23, 2010 (see Appendix A for concurrence letter).

Consequently, the Segment 3 project will not have significant impacts on archaeological sites.

3.10.3 Avoidance, Minimization, and Mitigation

The Build Alternative in Segment 3 would not adversely affect cultural resources, and so no mitigation is required.

3.11 Noise

Traffic on the Interstate system in Segment 3 affects noise levels at adjacent noise-sensitive areas such as residences. This section describes noise levels in those areas and the likely future increase in noise levels as a result of the proposed Segment 3 roadway improvements. This section also includes a qualitative discussion of the potential changes to the study area's ambient noise levels caused by the railroad corridor consolidation improvements.

During Tier 1, the noise investigation was limited to estimating existing and future noise levels and the number of sensitive receivers such as hospitals, churches, schools and residences. No noise monitoring was conducted in the field to determine actual noise levels and a noise model was not used to more precisely predict future noise levels. The Tier 1 Draft EIS noted that detailed noise assessments will occur during Tier 2 for each segment analyzed.

The criteria for evaluating noise impacts for highway projects are contained in Title 23 CFR Part 772—*Procedures for Abatement of Highway Traffic Noise and Construction Noise*. The Iowa DOT prepared a policy document titled *Highway Traffic Noise Analysis and Abatement* (Policy No. 500.07) that is consistent with the federal guidelines (Iowa DOT 2007). The Category B criterion in these documents, an hourly sound level that approaches or exceeds 67 decibels (dBA) energy equivalent sound level (L_{eq}), applies to residences, churches, schools, recreation areas, and similar uses. Other developed land, such as commercial or industrial, is included in Category C, for which an hourly sound level criterion that approaches or exceeds 72 dBA L_{eq} has been established. These criteria are determined at the exterior of structures during peak-hour noise conditions.

Table 3-12 summarizes the FHWA design level/activity relationship used to determine the noise abatement criteria (NAC) for specific land uses (such as residential or commercial). FHWA and Iowa DOT consider a traffic noise impact to occur if predicted peak-hour noise levels approach, meet, or exceed the NAC. The Iowa DOT defines "approach" as noise levels within 1 dBA of the NAC, signifying 66 dBA for Activity Category B and 71 dBA for Activity Category C.

Besides the sound levels described above, the FHWA and Iowa DOT consider a traffic noise impact to occur if predicted sound levels will be *substantially higher* than existing levels as a result of the highway improvement. Iowa DOT policy states that a predicted traffic noise level of 10 dBA or more over existing levels constitutes a substantially higher increase in noise levels. As a result, noise abatement must be considered if predicted design year noise levels result in an increase of 10 dBA or more over existing ambient noise levels in Iowa.

TABLE 3-12
Federal Highway Administration Design Noise Level/Activity Relationships

Activity Category	Design Noise Levels Leq hourly (dBA)	Description of Land Use Activity Category
A[a]	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where preservation of those qualities is essential if they are to continue to serve their intended purpose. Such areas could include amphitheaters, parks or parts of parks, open spaces, or historic districts dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B[a]	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, and parks that are not included in category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties or activities not included in Categories A and B.
D	—	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

[a]Category A and B parks include public or private lands used as parks and public lands officially set aside or designated by a governmental agency as parks on the date of public knowledge of the proposed highway project.

Source: Code of Federal Regulations. Title 23 CFR Part 772–*Procedures for Abatement of Highway Traffic Noise and Construction Noise.* Federal Highway Administration April 1992.

3.11.1 Existing Conditions

Vehicular traffic along I-80 and I-29 is the dominant source of noise in the Segment 3 study area. Other noise sources include traffic on adjacent local roadways, trains, land cultivating and maintenance activities, and occasional aircraft over-flights. Land uses vary throughout the study area and include a mix of residential, commercial, industrial, and agricultural uses. The FHWA Traffic Noise Model 2.5 was used to calculate existing traffic noise levels and design year (2030) traffic noise levels at noise sensitive locations within the study area. To serve as a check on model results, existing noise levels were measured at seven representative locations in the Segment 3 Study Area from 10 A.M. to 1:00 P.M. Noise levels at 44 residential receiver locations, 1 school (two locations), and 15 commercial receiver locations representing noise-sensitive areas were analyzed in the noise model. Figures 3-13A, 13B, and 13C show the noise receiver locations selected for analysis.

3.11.2 Impacts

3.11.2.1 No-Build Alternative

Of 46 noise-sensitive receivers (44 residences and 1 school with 2 receivers) in Segment 3, 13 approach or exceed the 67 dBA NAC for residential uses (Table 3-13). One commercial receiver approaches the 72 dBA NAC for commercial uses. In 2030 with the No-Build Alternative, 20 receivers are predicted to approach or exceed the 67 dBA NAC for residential uses; 2 commercial receivers would exceed the 72 dBA NAC. Noise receivers with noise levels approaching, meeting or exceeding the NAC are noted in bold in Table 3-13. Generally, 2030 noise levels for the No-Build Alternative are 1 to 3 dBA higher than existing levels for commercial and residential receivers. Because the No-Build Alternative would not include railroad corridor consolidation improvements, noise from railroad operations, including horn noise at at-grade crossings, would be heard in the same locations it is heard today.

3.11.2.2 Revised Build Alternative B

Future (2030) peak-hour traffic volumes were used in the model to predict peak-hour traffic noise levels. The calculated peak-hour traffic noise levels are shown in Table 3-13. Figures 3-13A, 13B, and 13C show the locations of the receivers identified in Table 3-13. The figures also show the location of the estimated 67 and 72 dBA contours. The 67 dBA contour represents the residential NAC and the 72 dBA contour represents the commercial NAC. Existing noise levels are uniformly lower than the future No-Build Alternative levels, but the same pattern does not hold when comparing the future No-Build Alternative and Revised Build Alternative B. There are residential receivers (M-1, M-5, R-16, R-18, R-33, and R-37) under Revised Build Alternative B who would have the same noise levels as the No-Build Alternative. There are also residential receivers for whom noise levels under the No-Build Alternative would be greater than noise levels under Revised Build Alternative B (M-4, R-11, R-15, R-19, and R-28). For commercial properties, six future No-Build receivers would have greater noise levels than under Revised Build Alternative B; noise levels at three receivers would be the same for the future No-Build Alternative and Revised Build Alternative B; and noise levels at five receivers would be less for the future No-Build Alternative than Revised Build Alternative B.

Under future build conditions, the peak-hour traffic noise levels at the residential and commercial modeled locations range from 55 to 73 dBA. Although not shown on Table 3-13, noise levels above 70 dBA and reaching 76 dBA were predicted for residences proposed for relocation. Revised Build Alternative B 2030 noise levels generally are 1 to 6 dBA higher than existing levels for all receivers. However, there are two commercial receivers that would experience noise reductions of 1 to 3 decibels with Revised Build Alternative B. Eighteen receiver locations would approach or exceed the NAC for residential uses. Three receiver locations would approach or exceed the NAC for commercial uses. Increases in future noise levels above existing levels for all receivers would be up to 6 dBA, below the Iowa DOT definition of a substantial increase.

3.11.2.3 Train Noise

As noted in Section 3.11.1, the predominant source of noise in the study area is vehicular traffic along I-80/I-29. Train noise is a less important source of noise because of the infrequency of trains passing through Segment 3, their travel speed, and their distance from sensitive receptors.

TABLE 3-13
Predicted Peak-Hour Noise Levels

Receiver	Existing (dBA) 2005	Future No-Build (dBA) 2030	Future Build (dBA) 2030	Build Increase Above Existing (dBA)
C01	70	**71**	**73**	3
C02	69	70	68	-1
C03	66	67	67	1
C04	64	66	64	0
C05	61	63	61	0
C06	67	69	64	-3
C07	67	69	67	0
C08	66	68	**71**	5
C09	**71**	**73**	**73**	2
C10	67	68	68	1
C11	66	67	68	2
C12	60	61	62	2
C13	64	66	65	1
C14	53	55	55	2
C15	54	56	58	4
M1	64	**66**	**66**	2
M2	65	**66**	**68**	3
M3	NA	NA	NA	NA
M4	**68**	**69**	**68**	0
M5	**68**	**69**	**69**	1
M6	NA	NA	NA	NA
M7	60	62	60	0
R01	63	64	**68**	5
R02	**70**	**72**	Displaced	NA
R03	**66**	**68**	**71**	5
R04	**74**	**75**	Displaced	NA
R05	**67**	**69**	**71**	4
R06	63	65	**68**	5
R07	61	63	**66**	5
R08	64	**66**	**68**	4
R09	**66**	**68**	Displaced	NA
R10	61	63	64	3
R11	**67**	**68**	**67**	0
R12	61	62	63	2
R13	58	59	60	2
R14	60	61	62	2

TABLE 3-13
Predicted Peak-Hour Noise Levels

Receiver	Existing (dBA) 2005	Future No-Build (dBA) 2030	Future Build (dBA) 2030	Build Increase Above Existing (dBA)
R15	**66**	**68**	**67**	1
R16	**66**	**67**	**67**	1
R17	60	61	63	3
R18	**66**	**68**	**68**	2
R19	**69**	**71**	**70**	1
R20	57	59	60	3
R21	58	60	61	3
R22	**68**	**69**	Displaced	NA
R23	61	63	65	4
R24	58	59	61	3
R25	64	**66**	**68**	4
R26	57	58	62	5
R27	60	62	64	4
R28	64	**66**	65	1
R29	56	58	57	1
R30	56	58	60	4
R31	55	57	59	4
R32	60	63	63	3
R33	63	**66**	**66**	3
R34	54	56	60	6
R35	59	61	64	5
R36	55	57	60	5
R37	65	**67**	**67**	2
R38	60	62	63	3
R39	54	56	59	5
Sch1	63	65	62	-1
Sch2	59	61	60	1

R/Sch–Category B receivers (i.e. residences, schools, churches)

C–Category C receivers (i.e. commercial properties, businesses)

NA–M3 and M6 were used for model calibration only, and were not included in the impact analysis.

Bold/underlined values denote noise levels that approach, meet, or exceed the NAC

The railroad corridor consolidation improvements will result in the transfer of railroad right-of-way to Council Bluffs, track consolidation in existing railroad right-of-way, and the development of new sections of track west of Mosquito Creek that tie into existing segments of the CBEC and BNSF railroads. Transferring the part of the CBEC Railroad between I-29 and the east side of U.S. 275/IA 92 to Council Bluffs would remove a noise source near Lewis

Central High School, the residential and park uses on South Omaha Bridge Road, and the residential area east of Harry Langdon Boulevard and the high school. Removing the BNSF railroad tracks east of South Expressway from the Lake Manawa Power Centre to near 10th Avenue would primarily benefit commercial and industrial uses, but may have a positive effect on the large residential area west of South Expressway and north of I-80/I-29.

Removing railroad tracks from intersections with the local road network also means eliminating the horns sounded as a safety measure. Although the horns are part of the overall railroad noise, their use in urban areas adds a noise dimension that is not part of railroad noise in more rural areas without crossings. The lack of railroad horn noise will be an improvement in the overall ambient noise level for residential and commercial uses.

Adding tracks to part of the CBEC Railroad west of Harry Langdon Boulevard and to the BNSF/Iowa Interstate rail yard north of the East System Interchange will have little impact on sensitive receptors because of the current level of rail noise in those areas and the distance from those areas to large blocks of sensitive noise receptors. Finally, the development of new rail lines along the west side of Mosquito Creek from near the south project terminus to existing CBEC and BNSF tracks within the general East System Interchange area will likely have little impact on sensitive noise receptors because of the distance between the new tracks and large blocks of sensitive receptors.

The STB regulates noise and vibrations associated with certain actions that meet or exceed the analysis thresholds identified in their environmental regulations. The STB's noise analysis requirements exist in 49 CFR 1105.7, and state "If any of the thresholds identified in item (5)(i) of this section are surpassed, state whether the proposed action will cause: (i) An incremental increase in noise levels of three decibels Day-Night Average Sound Level (Ldn) or more; or (ii) An increase to a noise level of 65 decibels Ldn or greater. If so, identify sensitive receptors (e.g., schools, libraries, hospitals, residences, retirement communities, and nursing homes) in the project area, and quantify the noise increase for these receptors if the thresholds are surpassed." Because the new rail corridor west of Mosquito Creek would have more than eight trains per day, the STB threshold for the requirement to perform a noise analysis is exceeded.

In order to assess the potential train noise levels associated with the proposed new construction, a General Noise Assessment (Federal Transit Administration (FTA), 2006) was performed to determine the distance to the 65 dBA Ldn contour line. Based on the projected operational information, noise analysis results show that the distance to an Ldn of 65 dBA is 300 feet (HDR Engineering, Inc., 2011b). There are no noise-sensitive receivers or land uses within 300 feet of the proposed new segment of rail line.

Although STB rules in 49 CFR 1105 do not regulate train-induced vibrations, a vibration analysis was also conducted for the new rail corridor west of Mosquito Creek. The FTA methods use a unit called the vibration decibel (VdB) to express ground-borne vibration velocity levels. Based on Table 9-2 of the FTA guidance document (FTA, 2006), the distance to the vibration screening contour is 600 feet. There are two residences and the First Assembly of God church that appear to be within approximately 600 feet of the proposed new segment of rail line; all are vibration-sensitive receptors.

Of these three vibration-sensitive land uses, the one closest to the proposed new rail line is a residence on East South Omaha Bridge Road. It is approximately 525 feet from the proposed new rail line. Analysis results indicate that project-related ground-borne vibration levels are projected to be below 53 VdB at the nearest residence (HDR Engineering Inc., 2011b). The vibration impact threshold for residential lands is 72 VdB. Therefore, vibration impacts are not predicted to occur at this or either of the other two vibration-sensitive receivers in the Study Area.

3.11.3 Avoidance, Minimization, and Mitigation

Consistent with Iowa DOT noise abatement policy, noise-sensitive areas within the Segment 3 project area predicted to exceed the federal and state NAC of 66 dBA will require consideration of noise abatement. A noise abatement analysis was conducted at sensitive receiver locations to determine the effectiveness and reasonableness of sound walls and other abatement measures. The analysis was conducted in accordance with the methodology established in Title 23 CFR, Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. For this analysis, vertical noise barriers are preferred since earthen berms may require substantial right-of-way acquisition. Other noise abatement techniques such as transportation management measures, modification of speed limits, and restriction of trucks will be against the project purpose. Iowa DOT's specific requirements for traffic noise abatement are summarized below. According to Iowa DOT's *Highway Traffic Noise Analysis and Abatement Policy, Policy 500.07,* (May 17, 2007), the cost of constructing a noise barrier would be considered reasonable if the cost does not exceed $35,000 per affected residence based on 2007 costs. The guidance also states that the cost factor may be adjusted 4.5 percent annually to account for inflation. For the purposes of this study it was assumed that all noise barriers would be constructed by 2020, therefore the cost per benefited residence used for this study is $62,000, which includes the annual 4.5 percent adjustment for inflation. The following is a summary of pertinent guidelines for the Iowa DOT:

- The allowable cost per benefited residence (any dwelling unit) is $62,000 based on 2020 costs.
- A benefited residence is one where noise abatement measures are predicted to reduce noise levels at its commonly used outdoor space by 5 dBA or more.
- For solid wall noise barriers, a 5-dBA reduction of noise levels is required, but a reasonable effort should be made to decrease noise levels by 8 to 10 dBA. The maximum height above grade of noise walls should not exceed 16 feet for extended distances.

Noise barriers were considered only for residential areas with multiple individual dwelling units. Commercial buildings were not included in the noise abatement analysis because activity at those facilities usually occurs indoors, and commercial buildings normally desire visual exposure from the highway. Iowa DOT noise policy provides guidance for evaluating noise abatement options. For a noise barrier to be constructed, it must be "feasible" and "reasonable." A noise barrier is considered feasible if it provides a substantial reduction in noise. A substantial noise reduction is an 8 to 10 dBA noise reduction. A noise barrier is considered reasonable if it costs $62,000 or less per benefitted residence based on 2020 costs. Six barrier segments were analyzed in Segment 3. Barrier 1 is located north of I-80/I-29 between Indian Creek and the South Expressway interchange. Barriers 2 and 3 are located west of South

Expressway north of the South Expressway interchange. Barrier 4 is located east of the I-80/I-29 East System interchange, and Barrier 5 is located adjacent to Woodbury Avenue and south of the Madison Avenue Interchange. Barrier 6 is located at the east end of the study area adjacent to an apartment complex on the north side of I-80. There are two pieces of Barrier 6 separated by a 20-foot-high berm that shields the multifamily housing to the west. The six noise barriers meet the feasibility criteria by achieving a 5-dBA reduction as required by the Iowa DOT. In addition, Barriers 1, 5, and 6 also meet the cost reasonableness criterion of $62,000 per benefited residence as shown in Table 3-14. Although Barriers 2, 3, and 4 meet the feasibility criteria, they exceed the cost reasonableness criteria and would not be reasonable to build. The six barriers evaluated in Segment 3 are shown in Figures 3-13D and 3-13E.

TABLE 3-14
Summary of Barrier Cost Reasonableness Analysis

Barrier Segment	Benefited Residences	Barrier Height (ft)	Barrier Length (ft)	Barrier Area (ft^2)	Total Barrier Cost (2020)	Cost per Benefited Residence (2020)	Reasonable to Build?
Barrier 1	61	8–16	3,618	44.842	$2,780,204	$45,577	Yes
Barrier 2	6	8	895	7,163	$444,106	$74,018	No
Barrier 3	2	8–12	399	3,993	$247,566	$123,783	No
Barrier 4	3	8–14	1,304	16,045	$994,790	$331,597	No
Barrier 5	18	8–14	1,200	14,199	$880,338	$48,908	Yes
Barrier 6	16	8–12	1,400	12,827	$795,274	$49,705	Yes

Note: Costs were calculated using a 4.5% increase per year, to represent costs for 2020. Barriers would cost $62 per square foot. Barrier cost must not exceed $62,000 per benefitted residence based on 2020 costs for it to be reasonable to build.

As shown in Figure 3-13E, a section of barrier 6 and the apartments on Valley View Drive shielded by the barrier, extend into Segment 5 of the overall CBIS improvements. Figure 1-2 shows the location of Segment 5. As part of the Segment 3 noise analysis, the study limits were expanded into Segment 5 to evaluate the full noise impacts to the adjacent apartment complexes. The noise study used available conceptual design information for the I-80 mainline in Segment 5. As Segment 5 progresses through the Tier 2 NEPA process and design, the noise impacts to the apartments on Valley View Drive developed as part of the Segment 3 EA would be reevaluated to include any roadway geometric changes from the assumptions made in the 2010 analysis. The reevaluation may better define the limits of noise barrier 6. Also, prior to constructing the ultimate Segment 3 project, which includes the Madison Avenue interchange to the east Segment 3 terminus, Iowa DOT will evaluate whether barrier 6 is included in the Segment 3 improvements or is deferred to the Segment 5 project. The timing of construction packages in Segments 3 and 5 would be reviewed to determine the most appropriate time to construct the proposed barrier.

The study's noise analysis indicates that noise barriers 1, 5, and 6 are reasonable and feasible. In the project's design phase, Iowa DOT will continue to evaluate the feasibility of the barriers as more detailed engineering information becomes available. Iowa DOT will also coordinate with the public to obtain their input on the noise barriers. After evaluating the additional design information and public input, Iowa DOT will decide whether the three noise barriers will be constructed.

TABLE 3-15
Effect of Noise Barriers on Selected Protected Receivers

Barrier	Benefited Receiver	Existing Noise Level (dBA)	2030 Noise Level w/o Barrier (dBA)	2030 Noise Level w/ Barrier (dBA)
1	1	63	68	63
	3	66	71	65
	5	67	71	65
	6	63	68	63
	8	64	68	63
5	M2	65	68	62
	25	64	68	63
6	33	63	66	61
	37	65	67	62

3.11.4 Construction Noise

Construction noise will be minimized by the use of mufflers on construction equipment. Air compressors will meet federal noise level standards and will, if possible, be located away or shielded from residences and other sensitive noise receivers. Where pavement must be fractured or structures removed, care will be taken to prevent vibration damage to adjacent structures. In areas where construction-related vibration is expected, surveys may be conducted before construction begins to document any current damage and establish a baseline to determine whether future damage was caused by highway construction.

3.12 Regulated Materials

Properties where hazardous materials or wastes have been stored may pose a future risk if spills or leaks have occurred. Transportation of hazardous materials or wastes on roadways or rail may result in an occasional spill or leak. Contaminated or potentially contaminated properties are of concern for transportation projects because of the potential liability for cleanup costs resulting from right-of-way acquisition, and the safety concerns related to exposure to contaminated soil, surface water, or groundwater associated with construction.

During Tier 1, sites that may have regulated materials within the area of potential impact were identified through a database search and windshield surveys. The results of this reconnaissance investigation were reported in the Tier 1 Draft EIS. During Tier 2, a Phase I Environmental Site Assessment (ESA) was conducted for sites within or near the area of potential impact for Segments 1, 2, and 3 (HDR 2006a). The field study reviewed the Tier 1 area of potential impact because the preliminary impact area for Tier 2 had not yet been determined. The Phase I ESA involved a database search and a windshield survey; the survey investigated sites identified in the database search, reviewed the area for undocumented sites, determined uses of properties, and observed evidence of regulated material releases. Additional work included reviewing agency records and interviewing property owners/operators for specific sites.

Sites outside but near the area of potential impact for Segment 3 were identified for initial evaluation because of their potential risk of contaminant migration into the area of potential impact. Not every property warranted the same level of assessment; therefore, a staged approach was implemented. As information was gathered, it was used to evaluate whether additional assessment was needed for each property. The assessment proceeded only for properties with a likely recognized environmental condition (REC) present. A staged approach was used to screen sites that were outside the area of potential impact for Segment 3 and to focus the investigation on moderate- and high-risk sites within that area.

Sites within the area of potential impact for Segment 3 were assessed for their potential risk using draft criteria subsequently published in Iowa DOT's *Office of Location and Environment Manual* (Iowa DOT 2009). Iowa DOT classifies sites as high, moderate, low, or minimal risk. The Phase I ESA report (HDR 2006a) included recommendations for further investigation, which were considered when determining potential impacts on the sites within or near the preliminary impact area evaluated in the Tier 2 study.

The inclusion of railroad corridor consolidation improvements as part of the project concept expanded the project study area. A field review of properties with a likely REC in the previously unsurveyed areas in Segment 3 was conducted in summer and fall 2008, and the findings and conclusions of the surveys were documented in a Regulated Materials Technical Memorandum Addendum (HDR 2008), and a Site Visit Memorandum (HDR 2009), respectively.

Hazardous materials are transported by rail as well as roadway, with train shipments involving large quantities of materials. Shippers and cargo of large quantity shipments through the study area were identified and evaluated for impacts.

3.12.1 Existing Conditions

The 2006 Phase I ESA report identified, 33 sites with likely RECs within or near the Tier 1 area of potential impact for Segment 3. The sites identified were a mix of low risk, moderate risk, and high risk sites. During the 2008 investigation of the expanded study area, additional low risk, moderate risk, and high risk sites were identified. Several of the sites identified in 2006 were reevaluated in 2008. Sites characterized as low or minimal risk do not warrant further evaluation of impact on the Segment 3 Project or for the project's impact on the site. Therefore, the remainder of this section focuses only on the moderate and high risk REC sites within or near the preliminary impact area of the Segment 3 Project (Table 3-16).

Listed below is a brief description of the high and moderate risk sites in Segment 3. The sites with likely RECs are shown on Figure 3-14.

- **British Petroleum (Amoco) Terminal** is located southwest of the U.S. 275/IA 92 interchange. No storage tanks are within the preliminary impact area, but the berm for one of the tanks and a building are adjacent to it. BP owns the land east of the tank farm but leases the land for crop use. The large quantities of stored hazardous materials and the potential for leaking and migration from the site increase the possibility of encountering regulated materials outside the site boundary. It is under corrective action because of a plume of organics migrating from the tank farm area, some of which is below the preliminary impact area. To monitor the movement of the plume, about five monitoring wells have been placed east of the terminal on the agricultural land BP owns,

which is within the project's preliminary impact area. The facility complex is considered a high risk because of the extent of contamination and regulatory involvement.

- **Cooperative Refining LLC/National Cooperative Refining Association (NCRA)** includes at least 15 bulk storage fuel tanks. Past releases have occurred and have contaminated soils on site, and groundwater beneath the site. Contaminated groundwater has slowly migrated offsite but is roughly 100 feet and downgradient beneath the preliminary impact area. The free product plume extends outside the site boundary in two areas: one slightly north of the facility and south of Tank Farm Road, the other beneath the BNSF property then back into the NCRA property. The closest monitoring wells are roughly 100 feet from the preliminary impact area. Free product removal and groundwater monitoring are ongoing processes. The facility complex is considered a high risk because of the extent of contamination and regulatory involvement.
- **Warren Distribution (Former)** is located on 29th Avenue adjacent to Anderson Excavating Company property and Lateral 5. The site has concentrations of arsenic, lead, polychlorinated biphenyls (PCBs), and total petroleum hydrocarbon that exceed State Screening Levels. A network of 13 monitoring wells is located within the property to determine the extent of groundwater contamination due to past disposal practices. The property is within the preliminary impact area and may include up to five monitoring wells. Because of the type and concentration of contamination, the site is considered to be a high risk site.
- **Council Bluffs Former Manufactured Gas Plant** (FMGP) is located on the northeast and northwest corners of 7th Street and 11th Avenue. The site is contaminated with polycyclic aromatic hydrocarbons, and benzene, toluene, ethylbenzene and xylene constituents. Because the City of Council Bluffs and Iowa DNR have requested USEPA assistance initiating further investigation and remediation of the property, it is considered to be a high risk site that is intersected by the preliminary impact area.
- **Anderson Excavating Company** is located on 29th Avenue. Iowa DNR has given the site a No Action Required classification under the Comprehensive Environmental Response, Compensation, and Liability Information System. Anderson Excavating owns or operates properties in the rail yard within the preliminary impact area. Field evaluation of the areas in the rail yard revealed piles of material (including asphalt and concrete), heavy equipment, and debris. Due to poor housekeeping issues, long-term railroad operations in the area, and previous Administrative Orders, the potential risk associated with this site is moderate.
- **Schildberg Construction Company,** which is located within the I-80/I-29 East System interchange (and consequently is within the preliminary impact area), includes a pond and recycling area north of the pond. The site was identified as a moderate risk site because it has a holding pond for drainage through Lateral 5 from sites north of 29th Avenue that were identified as moderate or high risk (Anderson Excavating, Warren Distribution (former), and Iowa Interstate).
- **Iowa Interstate Railroad Ltd** is located on South Avenue. A railroad company operation is listed in the FINDS database and is identified as a Resource Conservation and Recovery Act - Small Quantity Generator (RCRA-SQG) of hazardous waste. Because of the risks

associated with spills and leakage of hazardous materials at railroad sites, and poor housekeeping of the site, the risk posed by the site is considered moderate. The preliminary impact area includes Iowa Interstate Railroad Ltd property.

- **Brownfield Cluster #2** is located at 900, 924, 1000, 1026, 1100, and 1001 S. 6th Street and 1000 South Main. It includes the former location of International Harvester (which is listed on Iowa DNR's Contaminated Sites list). Because Iowa DNR lists it as a priority 2 risk site, the potential risk by Iowa DOT criteria is considered to be moderate. The preliminary impact area includes a part of the property.
- **Farm Service Company (Former)** had a leaking underground storage tank (LUST) that has been determined to require No Additional Response (NAR), but Iowa DNR's LUST database notes that free product is present. Cleanup of the site was initiated in 1994 and soil cleanup was completed in 2005; recovery of free product from groundwater is still ongoing. The site is now owned by the City of Council Bluffs, and is adjacent to the preliminary impact area.
- **Part Mart Salvage (Former)** appears to be located on an area that has been a long-term host of motor vehicle salvage yards under different ownership. Based on typical housekeeping practices of salvage yards, it is likely that there is surface and subsurface contamination on site associated with leakage or drainage of batteries, carburetors, fuel tanks, filters, and other vehicle parts. The site is about 50 feet from the preliminary impact area.
- **Searle Petroleum** site has incurred four spills of more than 100 gallons of hazardous material for each incident. In 2001, the site received an Administrative Order for noncompliance with RCRA. The site is divided by 3rd Street, and a part of the parcel west of 3rd Street is about 50 feet from the preliminary impact area.

Hazardous Materials Transported By Rail. As indicated in Section 3.5, two businesses within the study area, SIRE and Searle Petroleum Company, utilize rail regularly to transport hazardous materials. SIRE is an ethanol facility with an annual output of 110,000,000 gallons. Approximately one train or seventy-five 30,000 gallon cars per week service the SIRE facility. The trains servicing SIRE utilize the CBEC track. Union Pacific Railroad Company utilizes IAIS track to service Searle Petroleum Company. Approximately twenty 24,000-gallon cars service the Searle Petroleum Company facility on a weekly basis.

SIRE and Searle Petroleum Company are the only two businesses within the study area that regularly use rail within the study area to transport hazardous materials. Irregular shipments from other shippers occur within the study area typically transporting petroleum and other chemicals.

3.12.2 Impacts

The impacts of the 11 REC sites listed in Table 3-16 and described above on the No-Build Alternative and Revised Alternative B are described below. In January 2007, HDR conducted limited Phase II ESA investigations[5] at the Anderson Excavating, Schildberg

[5] Limited Phase II ESAs are conducted to evaluate the presence or absence of contamination based on information determined during the Phase I ESA. The extent of contamination is not fully evaluated in a limited Phase II ESA.

Construction Company, and Iowa Interstate Railroad properties to evaluate the potential presence of contaminants in the soil resulting from prior use of the site. Pertinent information from the Phase II investigations is included in the information below.

TABLE 3-16
REC Sites Located within or near the Preliminary Impact Area (Council Bluffs, IA)

Risk	Name	Address
High	British Petroleum (Amoco) Terminal	829 E. South Omaha Bridge Road (Southwest of I-29 and IA 92)
High	Cooperative Refining, LLC/NCRA	825 E. South Omaha Bridge Road (Southwest of I-29 and IA 92)
High	Warren Distribution (current Anderson Excavating)	Along Lateral 5 within the rail yard area
High	Council Bluffs Former Manufactured Gas Plant	Northeast and northwest corners of 7th Street and 11th Avenue
Moderate	Anderson Excavating	116 29th Avenue
Moderate	Iowa Interstate Railroad	2722 South Avenue
Moderate	Schildberg Construction Company	101 29th Avenue
Moderate	Brownfield Cluster #2	South 6th Street and South Main Street
Moderate	Farm Service Company (Former)	1020 S. 8th Street
Moderate	Part Mart Salvage (Former)	1004 S. 12th Street
Moderate	Searle Petroleum	1701 S. 3rd Street

Sources: Council Bluffs Interstate System Phase I ESA Report. HDR Engineering, Inc. February 2006, and *Regulated Materials Technical Memorandum Addendum*. HDR Engineering, Inc. September 2008.

3.12.2.1 No-Build Alternative

The No-Build Alternative would not affect known RECs in Segment 3. However, future redevelopment of areas near RECs could cause unknown impacts. The No-Build Alternative would result in continued shipment patterns of hazardous materials, with continued risk to transport of large quantities of hazardous materials through the Lewis Central Campus. Hazardous material shipments would continue from Searle Petroleum.

3.12.2.2 Revised Build Alternative B

British Petroleum (Amoco) Terminal. A plume of contaminated groundwater is documented east of the tanks and within the project's preliminary impact area. Groundwater monitoring results indicate the typical groundwater depth in the preliminary impact area is below the depth that would likely be disturbed for construction. Given that free product removal and groundwater monitoring is ongoing and that the site is under Iowa DNR oversight, no contamination is expected to be encountered during the construction of Revised Alternative B adjacent to the terminal. Three of the five monitoring wells in the preliminary impact area are also in the area proposed for rail construction. Iowa DOT will coordinate with Iowa DNR before construction to develop a plan for relocating monitoring wells in the preliminary impact area.

Cooperative Refining LLC/National Cooperative Refining Association. Past releases have contaminated soils onsite and groundwater beneath the site. Contaminated groundwater has slowly migrated off site, but is not beneath the project's preliminary impact area. Given that free product removal and groundwater monitoring is ongoing, the site is under Iowa DNR oversight, and the site is located outside the preliminary impact area, no contamination is expected to be encountered during the construction of Revised Alternative B.

Warren Distribution (Former). Because this property is within the preliminary impact area and has concentrations of arsenic, lead, PCBs, and total petroleum hydrocarbon that exceed State Screening Levels, Iowa DOT will continue to refine the design of Revised Alternative B to minimize the amount of ground disturbing activity within the areas of concern. Iowa DOT will coordinate with the construction contractors to inform them of the type and location of contamination identified during the 2007 limited Phase II investigation, and a plan will be developed with Iowa DNR for the appropriate disposal of contaminated materials removed during construction. Two of the five monitoring wells in the preliminary impact area are also in the area proposed for road construction. Iowa DOT will also coordinate with Iowa DNR prior to construction to develop a plan for relocating monitoring wells in the preliminary impact area.

Council Bluffs Former Manufactured Gas Plant. The site is under investigation for surface and subsurface soil contamination, as well as groundwater contamination. Because the property is adjacent to the preliminary impact area, and soil disturbing activities may be limited to removing rail and railroad ties, minimal impacts on Revised Build Alternative B are anticipated. Iowa DOT will coordinate with USEPA if it becomes involved in the property and Iowa DNR before construction to ensure all appropriate precautions are taken to protect construction contractors and the public.

Anderson Excavating Company. During the 2007 limited Phase II ESA investigation soil, surface water, and sediment samples were collected and analyzed for metals, PCBs, volatile organic compounds (VOCs), and petroleum (*Limited Phase II Environmental Site Assessment, Anderson Excavating Company, Council Bluffs Iowa* (HDR 2007a). Two soil sample locations detected lead levels at concentrations exceeding Iowa DNR Statewide Standards for Concentrations in Soils and USEPA Region 9 Preliminary Remediation Goals (PRGs). USEPA now uses the Regional Screening Levels (RSLs), which utilize a number of USEPA regional sources for health-based risk values for long-term exposure. The two samples also had lead levels above RSLs for industrial soil. PCBs were not detected in the soil samples. Petroleum contamination was found at all sampling locations but at concentrations below the statewide standards for total extractable petroleum hydrocarbons. Barium was the only metal detected in surface water, at concentrations lower than the Iowa DNR criteria. Although the two samples with high lead levels are near the project's preliminary impact area boundary, the area is proposed for fill rather than excavation.

Based on the findings of the 2007 investigation and the likelihood that fill would be placed on the part of the property with the high lead levels, no contamination levels of concern are expected to be encountered during the construction of Revised Alternative B. Iowa DOT will coordinate with Iowa DNR, which is managing an ongoing study on the Anderson property near the area where two elevated lead levels were detected. Details of the study will be considered in determining the proper course of action with the property. Iowa DOT will also

coordinate with Iowa DNR before construction on the appropriate method of disposal for the piles of material, heavy equipment, and debris onsite.

Schildberg Construction Company. During the 2007 limited Phase II ESA investigation various petroleum compounds and metals, including lead, were present in the soil and sediment samples; however, the concentrations were below the Iowa statewide standards. (*Limited Phase II Environmental Site Assessment, Schildberg Construction Company Inc., Council Bluffs Iowa* (HDR 2007b)). The Phase II report also noted that the Schildberg pond is hydraulically connected to Lateral 5 and appears to gain and lose water from and to Lateral 5 depending on the pond elevation. The Schildberg pond and Lateral 5 eventually discharge to Mosquito Creek. Because the concentration of contaminants in the site's sediment and soil samples was below Iowa statewide standards, no contamination levels of concern are expected to be encountered during the construction of Revised Alternative B.

Iowa Interstate Railroad Ltd. During the 2007 limited Phase II ESA investigation soil samples were collected and analyzed for metals, PCBs, VOCs, and petroleum (*Limited Phase II Environmental Site Assessment, Iowa Interstate Railroad, Ltd., Council Bluffs Iowa* (HDR 2007c). None of the samples exceeded the Iowa statewide standards for soil, but arsenic was detected in two of the samples. Concentrations of arsenic exceed the RSLs. It should be noted that the Iowa statewide standard for arsenic is higher than the RSLs, partly because of comparatively high background levels. The RSL values for arsenic do not account for naturally occurring background concentrations of arsenic in soil. The petroleum concentration detected was below the Iowa statewide standard for total extractable petroleum hydrocarbons.

Based on a comparison of the analytical results to Iowa statewide standards and the RSLs, no contamination levels of concern are expected to be encountered during the construction of Revised Alternative B.

The construction activities would only disturb the soils for a short duration (on the order of a few months) before being stabilized with gravel or vegetation. The aforementioned arsenic levels in two soils samples are commonly found throughout the Omaha/Council Bluffs metropolitan area and are accounted for in the Iowa statewide standards. Therefore, no remediation or construction worker protection is warranted.

Brownfield Cluster #2. This site is under investigation for soil and groundwater contamination, and parts are scheduled for remediation to a depth of 2 feet below grade to remove polycyclic aromatic hydrocarbons concentrations above Iowa Statewide Standards. The investigations are being overseen by Iowa DNR. The preliminary impact area intersects the boundaries of the site where removal of railroad tracks is being considered. Because soils would not be planned to be excavated in support of rail and railroad tie removal, no contamination levels of concern are expected to be encountered during the construction of Revised Alternative B. Iowa DOT will coordinate with Iowa DNR before construction begins to obtain the most current information on the progress of site cleanup and need for additional remediation.

Farm Service Company (Former). Cleanup of the site began in 1994 and soil cleanup was completed in 2005; recovery of free product from groundwater is still ongoing. The site is now owned by the City of Council Bluffs, and is adjacent to the preliminary impact area.

Because the soil cleanup has been completed and the groundwater cleanup is ongoing, no contamination levels of concern are expected to be encountered during the construction of Revised Alternative B. Iowa DOT will coordinate with Council Bluffs before construction to determine the latest progress in remediating the site's groundwater.

Part Mart Salvage (Former). This site appears to be a long-term host of a motor vehicle salvage yard under different ownership. Based on typical housekeeping practices of salvage yards, it is likely that there is surface and subsurface contamination on site associated with salvaged vehicles. The property is about 50 feet from the preliminary impact area. Given the distance from the preliminary impact area, the type and extent of likely contamination, and the proposed activities for track removal and construction, no contamination levels of concern are expected to be encountered during the construction of Revised Alternative B.

Searle Petroleum. Although this site has incurred four spills of more than 100 gallons of hazardous material for each incident, the location of the property adjacent to (not within) the project's preliminary impact area, and likelihood that fill would be placed in the area adjacent to the site to accommodate new railroad tracks makes it unlikely that contamination levels of concern would be expected to be encountered during the construction of Revised Alternative B.

Hazardous Materials Transported By Rail. Revised Build Alternative B will not negatively impact SIRE operations and could improve operations for SIRE. There is opportunity for an additional track to be constructed as well as the proposed configuration would allow trains to stop/park on the track by relocating the CBEC track away from the Lewis Central Campus.

The construction of the Segment 3 Project would improve safety and vehicular and train efficiencies by reducing the number of at-grade crossings and eliminating some train movements from downtown Council Bluffs. No change in the amount of hazardous materials transported by rail is anticipated with the proposed improvements.

3.12.3 Avoidance, Minimization, and Mitigation

The Tier 1 and Tier 2 analyses of sites with regulated materials revealed potentially contaminated properties that could affect, or be affected by, the Segment 3 project. The conceptual and preliminary design process for the Project accounted for avoiding some sites, avoiding potential contamination sources at sites, and minimizing the proportion of a site within the preliminary impact area.

As the Segment 3 project enters final design, the Iowa DOT will coordinate with Iowa DNR as needed on addressing potential impacts to the REC sites, such as removal of certain monitoring wells and their replacement. Previous sampling results and other supporting information will be provided to the construction contractor to properly handle any contaminated soils and take any precautions necessary for protecting worker safety. Dust suppression techniques, such as periodic watering, will be implemented as part of standard construction mitigation practices to minimize airborne migration of soil; this practice will also serve to limit aerial dispersion of arsenic and lead in soil.

3.13 Pedestrian and Bicycle Paths

This section describes the potential of Revised Build Alternative B to affect pedestrian and bicycle facilities in the Segment 3 study area. Because pedestrians and bicyclists use the same trails, the term recreational trails will be used in this section to refer to the shared pedestrian and bicycle facilities.

The Tier 1 Draft EIS evaluated recreational trails in the five-segment study area. There has been a notable expansion to the recreational trail system in Council Bluffs and Segment 3 since the publication of the Draft EIS. The Council Bluffs Department of Parks, Recreation, and Public Property website states that there are currently 39 miles of connected trails in Council Bluffs. The city's paved system is made up of 10-foot-wide poured concrete and asphalt trails, with bike lanes used to link certain points of the trail together.

3.13.1 Existing Conditions

As part of this study, recreational trails near and within the expanded Segment 3 preliminary impact area were reevaluated for potential use impacts (HDR 2010b). The 2010 memorandum identified the seven trails below as within Segment 3 (Figure 3-15).

- Wabash Trace Nature Trail, extending from the trailhead park 63 miles southeast to Blanchard, Iowa
- Valley View Trail, extending generally north from the trailhead park to Valley View Park and north as a bike lane and then as Valley View Greenway Trail approaching Iowa Western Community College
- Lake Manawa Trail, extending west and south from the trailhead park to Lake Manawa State Park
- Unnamed connector trail from the Wabash Trace Nature Trail to the Harry Langdon Boulevard bike lanes
- Unnamed trail along U.S. 275 west of the BNSF Railway, extending west to bike lanes along Wright Road between Piute Street and South 11th Street, and continuing west as the Veterans Memorial Trail along U.S. 275 across the Missouri River along the Veterans Memorial Bridge
- Sunset Park Trail from South Expressway near 23rd Avenue to near 16th Avenue west of Sunset Park, and an extension of this trail from Indian Creek north of 14th Avenue, east to near South 8th Street
- An extension being constructed this year from the Lake Manawa Trail west to an existing unnamed trail east of Lake Manawa

3.13.2 Impacts

3.13.2.1 No-Build Alternative

It is unlikely the No-Build Alternative would affect recreational trails in Segment 3. Maintenance or expansion projects associated with the No-Build Alternative would be required by Council Bluff's Department of Parks, Recreation, and Public Property to avoid

impacts to existing trails. However, each of the other transportation projects in the No-Build Alternative would need to account for impacts on pedestrian and bicycle facilities in planning roadway alignments.

3.13.2.2 Revised Build Alternative B

Of the seven trails identified in Section 3.13.1, all except one (the unnamed connector trail from the Wabash Trace Nature Trail to the bike lanes on Harry Langdon Boulevard) are either outside the preliminary impact area or would only be temporarily occupied during construction without causing an adverse impact.

The segment of the unnamed connector trail that passes under the U.S. 275 bridge west of Harry Langdon Boulevard is within the preliminary impact area. Roughly 400 feet of the trail would be relocated to accommodate some of the piers on the reconstructed U.S. 275 bridge. This segment of the trail would be relocated up to 80 feet from its existing location to the area of the current CBEC railroad grade. Some property that the trail is currently located on would be used for construction of the proposed bridge.

3.13.3 Avoidance, Minimization, and Mitigation

There are no feasible alternatives for relocating the trail where it passes under the U.S. 275 bridge and continuing use of it beneath the bridge. The corridor for locating the unnamed connector trail is limited by the pier locations, the active CBEC railroad line, Mosquito Creek, and the abutment and embankment for the existing U.S. 275 bridge. The relocated trail would maintain the connectivity of the existing trail system, providing an off-road connection from the Wabash Trace Nature Trail and Lake Manawa Trail to the Harry Langdon Boulevard bike lanes.

Two options have been considered for accommodating the trail during construction of the U.S. 275 bridge. One option would be to keep the trail open as much as possible in its existing location. Protection for the trail would be erected as needed. The trail would be closed for 1 to 2 days at a time for demolition of the bridge and placement of piers and girders for the new bridge. The location of the trail would vary during construction of the bridge; when construction of the bridge is completed, the trail would be reopened without restrictions. This option is not feasible because Iowa DOT is planning to shorten the existing U.S. 275 bridge by about 20 feet. The east abutment of the bridge would be moved 20 feet to the west, leaving no room for the trail (which is restricted near an active rail line) and requiring its eventual relocation further west to the CBEC rail grade.

The other option would be to detour the trail temporarily by extending the bike lanes along Harry Langdon Boulevard to the US 275 intersection and detouring pedestrian and bicycle traffic from the unnamed connector trail to the extended bike lanes. The existing unnamed connector trail would be closed during a construction period of up to 5 years and would be reopened upon completion of the proposed U.S. 275 bridge and associated railroad and trail construction. The extended bike lanes along Harry Langdon Boulevard would be maintained indefinitely and would add a trail connection to the area.

Iowa DOT is coordinating with the City of Council Bluffs and other stakeholders to determine how to maintain trail continuity during construction. Although the trail mitigation plan has not been finalized, the plan is to connect the Harry Langdon Boulevard bike lanes to the

existing trail system. The plan is to extend the bike lanes by paving both shoulders of Harry Langdon Boulevard (to the same width as the existing bike lane width) to allow a connection to the Valley View Trail within Iowa School for the Deaf (ISD) property. The best connection option appears to be from the southeast corner of the US 275/Harry Langdon Boulevard intersection (Figure 3-15). Coordination with ISD has confirmed that the connection is possible, with a preference for a T-type connection to the Valley View Trail. Although all details of the mitigation plan have not been finalized, Iowa DOT is committed to providing a trail connection to replace the affected part of the unnamed connector trail.

3.14 Section 4(f) Resources

Section 4(f)[6] of the U.S. Department of Transportation Act of 1966, codified at 23 USC 138 and 49 USC 303, states that FHWA "may approve a transportation program or project requiring publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if there is no prudent and feasible alternative to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." Historic sites include archaeological sites eligible for listing on the NRHP for more than information potential. A revision of Section 4(f), as codified in 23 CFR 774, was issued on March 12, 2008, and became effective April 11, 2008. The revision did not change the definition of the protected resources, but modified the procedures for granting Section 4(f) approvals.

FHWA and Iowa DOT have developed a Section 4(f) decision process to determine the eligibility of properties or sites for protection under Section 4(f) and to evaluate them relative to the alternatives being considered. The Section 4(f) decision process involves five steps:

Step 1—Is it 4(f)?
Step 2—Is there a use of the 4(f) property[7]?
Step 3—Can the 4(f) property be avoided?
Step 4—Can the impacts to the 4(f) property be minimized?
Step 5—What documentation is needed?

In Tier 1, an investigation of potential Section 4(f) resources within the CBIS study area (including Segment 3) was conducted. The Tier 1 Draft EIS identified eight potential nonhistoric Section 4(f) properties:[8] three public parks, and five recreation areas. As stated in the Tier I Draft EIS, recreational trails open to the public are considered Section 4(f) properties. Existing as well as future trails are properties eligible for protection under

[6] The term "Section 4(f)" is replaced by the term "Section 303" in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. In keeping with current guidance from FHWA and the state transportation departments, however, this EA retains the term "Section 4(f)."

[7] A direct use impact occurs when a property protected by Section 4(f) is permanently incorporated into a transportation facility or is temporarily occupied, causing effects that are considered adverse. A constructive use impact occurs when a project does not incorporate (or remove) a property protected by Section 4(f) but is so close to the property that the activities, features, or attributes of the property are substantially impaired.

[8] Detailed archaeological and historic property surveys were pending in Tier 2 at the time the Tier 1 EIS was prepared. Results of the analyses were planned to be incorporated in the Tier 2 NEPA documents.

Section 4(f). The Lake Manawa Trail, Valley View Trail, and unnamed bike lanes along Harry Langdon Boulevard are in the Segment 3 study area.

3.14.1 Existing Conditions

In Tier 2, parks, recreational trails, conservation areas, and historic/architectural resources near and within the Segment 3 preliminary impact area were reevaluated for potential use impacts (HDR 2010b). The memorandum updates and supplements information in Section 4(f) memorandums prepared for the CBIS Tier 1 project. The memorandums were updated to address an expanded study area, and note any changes in resources evaluated previously. The 2010 memorandum identified the properties listed below as eligible for protection under Section 4(f). Figures 3-15 and 3-16 show the recreation areas (trails) and public parks, respectively. Figure 3-12 shows the historic structures.

- Public Parks
  - Sunset Park at 1000 16th Avenue
  - Peterson Park at 2500 South 8th Street
  - Valley View Park at 13 Franklin Avenue
  - Iowa West Foundation/Wabash Trailhead Park at US Highway 275 and South Omaha Bridge Road
- Historic Properties
  - Chicago, Rock Island and Pacific Passenger Train Depot at 1512 South Main Street
  - Farmers' Terminal (Bartlett Grain) Elevator at 2600 4th Street
  - Wabash Freight House at 200 29th Avenue
  - East South Omaha Bridge Road Bridge over Mosquito Creek
  - CB&Q (Burlington) Railroad plate girder bridge over Mosquito Creek
- Recreation Areas
  - Wabash Trace Nature Trail, extending from the trailhead park 63 miles southeast to Blanchard, Iowa
  - Valley View Trail, extending generally north from the trailhead park to Valley View Park and north as a bike lane and then as Valley View Greenway Trail approaching Iowa Western Community College
  - Lake Manawa Trail, extending west and south from the trailhead park to Lake Manawa State Park
  - Unnamed connector trail from the Wabash Trace Nature Trail to the Harry Langdon Boulevard bike lanes
  - Unnamed trail along U.S. 275 west of the BNSF Railway, extending west to bike lanes along Wright Road between Piute Street and South 11th Street, and continuing west as the Veterans Memorial Trail along U.S. 275 across the Missouri River along the Veterans Memorial Bridge
  - Sunset Park Trail from South Expressway near 23rd Avenue to near 16th Avenue west of Sunset Park, and an extension of this trail from Indian Creek north of 14th Avenue, east to near South 8th Street

- An extension being constructed this year from the Lake Manawa Trail west to an existing unnamed trail east of Lake Manawa
- Lewis Central High School practice fields are located behind Lewis Central High School and adjacent to U.S. 275. The three practice fields are used by the school for soccer and football practice, marching band, and physical education classes. The fields, which are open to the public, are also used for youth football and soccer leagues.

3.14.2 Impacts

3.14.2.1 No-Build Alternative

In comparing the features of potential transportation improvements for the No-Build Alternative in the general area of Segment 3 (Figure 2-2) to Council Bluff's parks and recreational areas (trails), it is unlikely the No-Build Alternative would adversely affect either type of Section 4(f) property in Segment 3. Because the mission of the Council Bluffs Department of Parks, Recreation, and Public Property is to develop and maintain the city's parks and recreational trails, it is unlikely the city would approve a transportation project that would adversely affect those resources. Future development would not likely affect park and recreational facilities. However, the private owners of the historic structures could renovate or demolish those resources.

3.14.2.2 Revised Build Alternative B

Of the Section 4(f) resources mentioned above, none of the parks or the boundaries of the historic properties are within the preliminary impact area. Consequently, no direct use would occur. The potential for constructive use of the properties was evaluated and no substantial impairment of their use is predicted (HDR 2010).

Of the Lewis Central High School practice fields and the seven trails identified in Section 3.13.1, all except one trail (the unnamed connector trail from the Wabash Trace Nature Trail to the bike lanes on Harry Langdon Boulevard) are either outside the preliminary impact area or would only be temporarily occupied during construction without causing an adverse impact. Consequently, except for the one trail that goes beneath the U.S. 275/IA 192 bridge, there would be no direct or constructive use of the Section 4(f) resources (HDR 2010).

Roughly 400 feet of the unnamed connector trail would be relocated to accommodate some of the piers on the reconstructed U.S. 275 bridge. Some property that the trail is currently located on would be used for construction of the proposed bridge. Mitigation for the impact to the trail is addressed in the following subsection.

3.14.3 Avoidance, Minimization, and Mitigation

The No-Build Alternative would not affect the unnamed connector trail, however; the No-Build Alternative is not a reasonable course of action because it would not address future traffic demand and safety concerns in the Segment 3 Interstate System.

As discussed in Section 3.13.3, there are no feasible alternatives for relocating the trail where it passes under the U.S. 275 bridge and continuing use of it beneath the bridge with Revised Build Alternative B. The corridor for locating the unnamed connector trail is limited by the

pier locations, the active CBEC railroad line, Mosquito Creek, and the abutment and embankment for the existing U.S. 275 bridge.

Of the two options that have been considered for accommodating the trail during construction of the U.S. 275 bridge described in Section 3.13.3, Iowa DOT and Council Bluffs have identified extending the bike lanes along Harry Langdon Boulevard south to the Valley View Trail and detouring pedestrian and bicycle traffic from the unnamed connector trail to the extended bike lanes as the most reasonable option. The extended bike lanes along Harry Langdon Boulevard would be maintained indefinitely and would add a trail connection to the area. This option would not qualify as a temporary occupancy exemption under Section 4(f) regulations.

After considering the impacts to the unnamed connector trail, the measures to avoid and minimize the impacts, and the proposed mitigation measures, FHWA proposes to make a de minimis impact determination for the unnamed trail. De minimis impacts to 4(f) resources are those that do not "adversely affect the activities, features and attributes" of the resource.

Iowa DOT is coordinating with the City of Council Bluffs and other stakeholders to determine how to maintain trail continuity during construction. Although the trail mitigation plan described in Section 3.13.3 has not been finalized, Iowa DOT is committed to providing a trail connection to replace the affected part of the unnamed connector trail.

3.15 Permits and Related Approvals

The Segment 3 Project is broad in scope and area, and crosses sensitive resources such as creeks, wetlands, and floodplains. Consequently, several environmental permits and approvals would be required prior to constructing the project. Because Revised Build Alternative B may be constructed in phases (interim project, ultimate project) with an undetermined length of time between the phases, it is likely that permits would need to be obtained for each phase. Iowa DOT will coordinate with the appropriate state and federal agencies to obtain required permits at the appropriate times in the final design phase.

Stream and wetland impacts are subject to nationwide or individual permits under Section 404 of the Clean Water Act (33 USC 1344). Nationwide permits are issued for projects that will have minimal impact, and the permits are generally granted on a quicker timeline. Individual permits are issued for projects that are likely to have more than minimal impacts on aquatic resources. Given the wetland acres affected by Revised Build Alternative B and the stream impacts to Drainage Lateral 5, an individual permit will be required. The permit program, administered by the USACE, covers the discharge of fill material into waters of the U.S., including wetlands. The USACE will evaluate the type of permit required under Section 404. Issuance of Section 404 permits is contingent on receipt of water quality certification from the Iowa DNR under Section 401 of the Clean Water Act. The Section 404 permit application serves as a joint application for Section 401 purposes. Coordination with the Iowa DNR and the USACE has occurred during Tier 1 and Tier 2, and will continue as the Segment 3 Project continues to develop.

A Floodplain Development Permit, including no-rise certification, will be required from the Iowa DNR and the City of Council Bluffs for the project's construction activities in the Mosquito Creek floodplain and floodway.

An Iowa Sovereign Lands Construction Permit will be required from Iowa DNR for construction on, above, or under state-owned water and land. Construction of the new Mosquito Creek bridges will require this permit. The Floodplain Development Permit and Iowa Sovereign Lands Construction Permit is a joint application form.

To minimize the construction-related water quality impacts of Revised Build Alternative B, construction in or near Segment 3 waterways would be performed in accordance with the state and local regulations. The Iowa DOT will obtain an NPDES permit (per Section 402 of the Clean Water Act) before the start of construction. As part of the permitting process Iowa DOT will prepare a SWPPP, supplemented by the construction contractor, that describes the range of erosion control measures (best management practices) that will be implemented on the project. The selected contractor would expand the SWPPP to apply their specific construction plans and operations. The Iowa DOT, in coordination with the Iowa DNR, will develop a best management practices approach to protect the adjacent environment from sedimentation and construction material pollutants discharged from construction activities. Other construction-related permits include temporary batch plant permits issued by the Iowa DNR. Mitigation plans will be developed to comply with the specific permit requirements.

Approval by Iowa DNR would also be required for eliminating groundwater monitoring wells from an active monitoring program at the BP Terminal facility and the Warren Distribution (Former) site.

To construct Revised Build Alternative B, the Iowa DOT must obtain railroad agreements with the BNSF, IAIS, and CBEC railroads. These agreements must be in place prior to construction of the Interstate improvements due to the changes in railroad clearances near South Expressway and the US 275 Interchange.

STB is responsible for the economic regulation of freight railroads, including approval of new rail line construction, and abandonment of existing rail lines. The Segment 3 Project would result in placing some rail lines out-of-service and constructing others, and potentially result in the change of service providers to at least one rail customer. Consequently, STB is a cooperating agency in the preparation of the Segment 3 EA. Any necessary approvals for rail line abandonment and construction, and change in service providers, would be acquired from STB prior to project construction.

3.16 Cumulative Impacts

The Council on Environmental Quality (CEQ) defines a cumulative impact as "The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR § 1508.7). The CBIS project design year (2030) was used to analyze cumulative impacts. The year 2030 represents a balance between providing enough time to allow a full consideration of cumulative effects from reasonably foreseeable projects and staying within the limits of relatively accurate near-

term trend predictions. The following projects are evaluated in this section because of their past impacts or ability to affect one or more of the resources being analyzed below:

- The Segment 1 and Segment 2 projects (the Segment 4 and 5 projects are more speculative because of funding limitations and are thus not evaluated for their input on cumulative impacts)
- The U.S. 275 project, which has widened parts of that highway to 4 lanes between the South Omaha Veterans Memorial Bridge and I-29
- The I-80/I-29 project, which added an eastbound lane to the overlap section to accommodate increasing traffic volumes and improve safety
- The Metro Crossing Shopping Center project, an 85-acre development with 500,000 square feet of retail space

The Tier 1 Draft EIS evaluated the CBIS project's (Segments 1 to 5) cumulative effects on water quality, wetlands, threatened and endangered species and land use. The process that was followed in Tier 1 to meet the CEQ's guidelines for conducting a cumulative effects analysis (scoping, describing the affected environment and determining the environmental consequences) will not be reexamined or repeated in this document. The starting point for this Tier 2 cumulative impact analysis are the Tier 1 conclusions about the CBIS project's cumulative effects on land use, water quality, wetlands and threatened and endangered species. Where applicable, this cumulative impact analysis updates the Tier 1 analysis to reflect changes in the range of projects contributing to cumulative effects and changes in the level of impacts caused by the Segment 3 project and other contributing projects. In addition, this analysis evaluates the cumulative effects on floodplains, which were not evaluated in Tier 1.

Although the No-Build Alternative developed in Tier 1 and reevaluated in Tier 2 is not a true no-action alternative, its direct and indirect impacts would be much less than for Revised Build Alternative B. For the purposes of the cumulative effects discussion, the No-Build Alternative is assumed to have no substantive direct and indirect impacts and therefore would not contribute substantially to cumulative effects. The analysis below is for Revised Build Alternative B.

3.16.1 Land Use

3.16.1.1 Tier 1 Analysis

The Tier 1 land use analysis compared the timelines of other reasonably foreseeable major projects likely to occur within the period of the CBIS improvements to assess the combined effects of the projects on land use in the area. The cumulative impact assessment considered the baseline conditions of the corridor, and whether the development is stable or in a period of decline. This analysis considered the relationship to the region's existing and planned land use, and determined whether regionally significant cumulative impacts could occur. The Tier 1 cumulative effects analysis concluded that the CBIS Improvements Project will minimally affect existing and future land use in the study area and generally conforms to future land use adjacent to the Interstate system. Expansion of the Interstate system could result in spot impacts on future land use and development.

3.16.1.2 Tier 2 Analysis

Since the publication of the Tier 1 Draft EIS, a third lane has been added to the overlap section between the West and East System interchanges and U.S. 275 has been widened to four lanes between the South Omaha Veterans Memorial Bridge and I-29. Both projects had the potential to affect land use because of the new right-of-way required or the improved access they provided. Reasonably foreseeable projects that have the same potential to impact the land use in Council Bluffs include the Segment 1 and Segment 2 improvements. As noted, the Segment 3 improvements require 443 acres of new right-of-way and displace 66 residences and 14 businesses. The commonality among the projects is that they are making changes to a highway system that is in place and around which land uses are well established, as are the land use policies that control changes in land use. Unlike the construction of the Council Bluffs urban Interstate system, which had clear land use changes caused by major disruptions to long-established neighborhoods and existing transportation routes, the CBIS projects, including the railroad corridor consolidation and similar projects do not create major disruptions in long established neighborhoods or to existing transportation routes.

As noted in Section 3.2, Revised Build Alternative B would reduce the number of residences and businesses along the Interstate system (with their potential relocation dispersed throughout the local area), but it would not change the overall land use designation at those locations. The use of retaining walls and other design measures to limit the number of project relocations is evidence of the nontransformative nature of Revised Build Alternative B on land use. Similarly, by maintaining existing access patterns and being an access-controlled facility, the Build Alternative neither opens undeveloped land nor denies access to existing uses that could result in land use changes in consideration of other reasonably foreseeable projects.

3.16.2 Wetlands

3.16.2.1 Tier 1 Analysis

The Tier 1 analysis stated that the CBIS Improvement Project and other reasonably foreseeable projects would result in a reduction of wetlands in Council Bluffs. Compared to the 2,400 acres of NWI wetlands in Council Bluffs, the Tier 1 analysis estimated that fewer than 60 acres of wetlands (less than 3 percent) could be affected by the CBIS Improvements Project. Ultimately, the total area of actual wetland impacts would be less than estimated because the right-of-way required for the selected Tier 2 concept would be smaller than the area of potential impact defined in Tier 1.

3.16.2.2 Tier 2 Analysis

In a national report to Congress, *Wetlands Losses in the United States: 1780s to 1980s* (Dahl 1990) the estimates given for Iowa indicate a loss of wetland area of 89 percent, from 4.0 million acres in the 1780s to 422,000 acres in the 1980s. Given the trend statewide, it is reasonable to say that, overall, the resource has been, and perhaps continues to be, in decline. Assessing the location and effect of cumulative impacts to wetlands in the Mosquito Creek watershed or even the CBIS project area is difficult. Not only is there a lack of comprehensive wetland coverage, but also there is incomplete reporting of wetland impacts. Wetland impacts that have been quantified in the CBIS project area include 1.6 acres in Segment 1 (Nebraska), 10.4 acres in Segment 2 and 18.26 acres in Segment 3 (both in Iowa). In addition, the development of Metro Crossing Shopping Center eliminated the entire

3.8-acre wetland 69. Although these impacts are minor in comparison to the estimated 2,400 acres of NWI wetlands in Council Bluffs, they result in habitat loss and diminished nutrient retention. The cumulative effect of wetland losses associated with the CBIS Improvements Project in conjunction with other projects would be minimized because of Iowa DOT's commitment to compensate for wetland losses and other project sponsors' requirements for wetland permits and wetland mitigation.

3.16.3 Floodplains

3.16.3.1 Tier 1 Analysis

As noted, there was no specific analysis of cumulative impacts to floodplains in Tier 1. However, the Tier 1 Draft EIS addressed cumulative impacts to threatened and endangered species, wetlands, and water resources (quality) which predominantly are located within floodplains.

3.16.3.2 Tier 2 Analysis

Historically, the loss of Iowa's natural ecosystems included the conversion of much of the state's former floodplain. Urban development in floodplains and the construction of levees to protect agricultural land and developed land have reduced floodplain acreage and have, in some locations, increased the severity of flooding. As a result of the substantial economic losses caused by flooding in Iowa and Pottawattamie County, all levels of government have been more diligent in preventing floodplain development, particularly development that increases flood levels. The concern for flooding impacts throughout the U.S. has facilitated remapping of 100-year floodplains in many areas. Based on recent remapping, new flood insurance rate maps were completed for the Council Bluffs area and issued in February 2005.

As with wetlands, assessing the location and effect of cumulative floodplain impacts in the watershed or project area is difficult. Under the CBIS Improvements Project, fill within floodplains is expected to amount to 5 acres in Segment 1, 14 acres in Segment 2, and 437 acres in Segment 3. In addition, the 85-acre Metro Crossing Shopping Center was developed in the floodplain. Given the amount of floodplain in Segment 3, it is reasonable to expect that additional floodplain development would occur between now and the project's design year. However, in approving a development, the City would require that it meets local floodplain regulations (Council Bluffs Floodplain Management Ordinance), such as requiring foundations of residential development to be above the 100-year floodplain.

The 2010 Mosquito Creek hydraulic study for Segment 3 concluded that the proposed I-29 Mosquito Creek crossing would result in no rise in the floodplain level because the new bridge would not reduce the existing 21 feet of freeboard or the existing waterway opening. Revised Build Alternative B would result in the placement of fill within the floodplain surrounding the I-80/I-29 East System interchange. This would reduce the capacity of the floodplain, but the effect would be negligible given the amount of floodplain in the Mosquito Creek watershed. The level of access control would not promote incompatible floodplain development. Therefore, cumulative floodplain impacts resulting from the CBIS Improvements Project and other reasonably foreseeable projects are estimated to be permanent, but minimal.

3.16.4 Water Quality

3.16.4.1 Tier 1 Analysis

The most commonly identified sources of stresses to surface water quality are modifications to stream habitats and pollutants (especially silt) delivered to rivers and streams in agricultural nonpoint source pollution. Other sources of impairment include industrial and municipal point and nonpoint sources and roadway pollutants, such as oil, soil, and metals.

Future development of areas adjacent to Mosquito Creek will continue to affect water quality in the area by increasing erosion and, subsequently, sediment loading of the creek and drainage channels discharging into the creek. Water quality also will be affected by runoff from parking lots and other pavements.

Impacts on the Missouri River, Indian Creek, and Mosquito Creek due to the construction of the CBIS Improvements Project will be cumulatively influenced by other projects in the region. Development adjacent to the Indian and Mosquito Creeks is likely through the period of analysis for cumulative impacts. With the implementation of mitigation and minimization measures during construction, the cumulative impacts on surface waters will be minimized. Therefore, cumulative water quality impacts on surface waters resulting from the CBIS Improvements Project and other reasonably foreseeable projects are estimated to be permanent but minimal.

3.16.4.2 Tier 2 Analysis

Because Mosquito Creek is the focus of the Water Quality Section for this Segment 3 EA, it is also the focus of this cumulative effects section. While transportation projects (the capacity expansion in the Segment 3, I-80/I-29 overlap section and the U.S. 275 widening) and other development (Metro Crossing Shopping Center) have been constructed since the publication of the Tier 1 Draft EIS, their impact on water quality is likely notably less than contributions from existing agricultural, municipal, and transportation sources. The inclusion of Mosquito Creek on Iowa DNR's Section 303(d) list suggests the creek has experienced a range of persistent problems over an extended period of time.

The construction and long-term operation of I-29 and I-80 will contribute some level of sedimentation/pollution to Mosquito Creek, but that contribution will be minor in relation to the range of impacts that together have degraded Mosquito Creek's water quality to the point where it is included on the Iowa DNR's Section 303(d) list. In addition, the erosion control measures that Iowa DOT will implement before construction and the long-term mitigation measures (detention ponds and catch basins) will further reduce the cumulative water quality impacts of Revised Build Alternative B. Although Revised Build Alternative B would contribute to water quality impacts, those impacts are not expected to be substantial.

3.16.5 Threatened or Endangered Species

3.16.5.1 Tier 1 Analysis

The Tier 1 analysis reported that loss of habitat for urban development is a factor in the overall decrease of threatened and endangered populations. Various environmental resource agencies provided information on threatened and endangered species that may be in the study area for the CBIS Improvements Project. The five threatened and endangered species

with potential habitat in Segment 3 depend on a mix of wetland and upland habitat. Fragmentation caused by urban development and agriculture have made most of the study area inhospitable to these species. The implementation of mitigation and minimization strategies aimed at ensuring habitat preservation likely would not result in cumulative adverse impacts on threatened and endangered species as a result of the CBIS Improvements Project and other sizable projects in the area.

3.16.5.2 Tier 2 Analysis

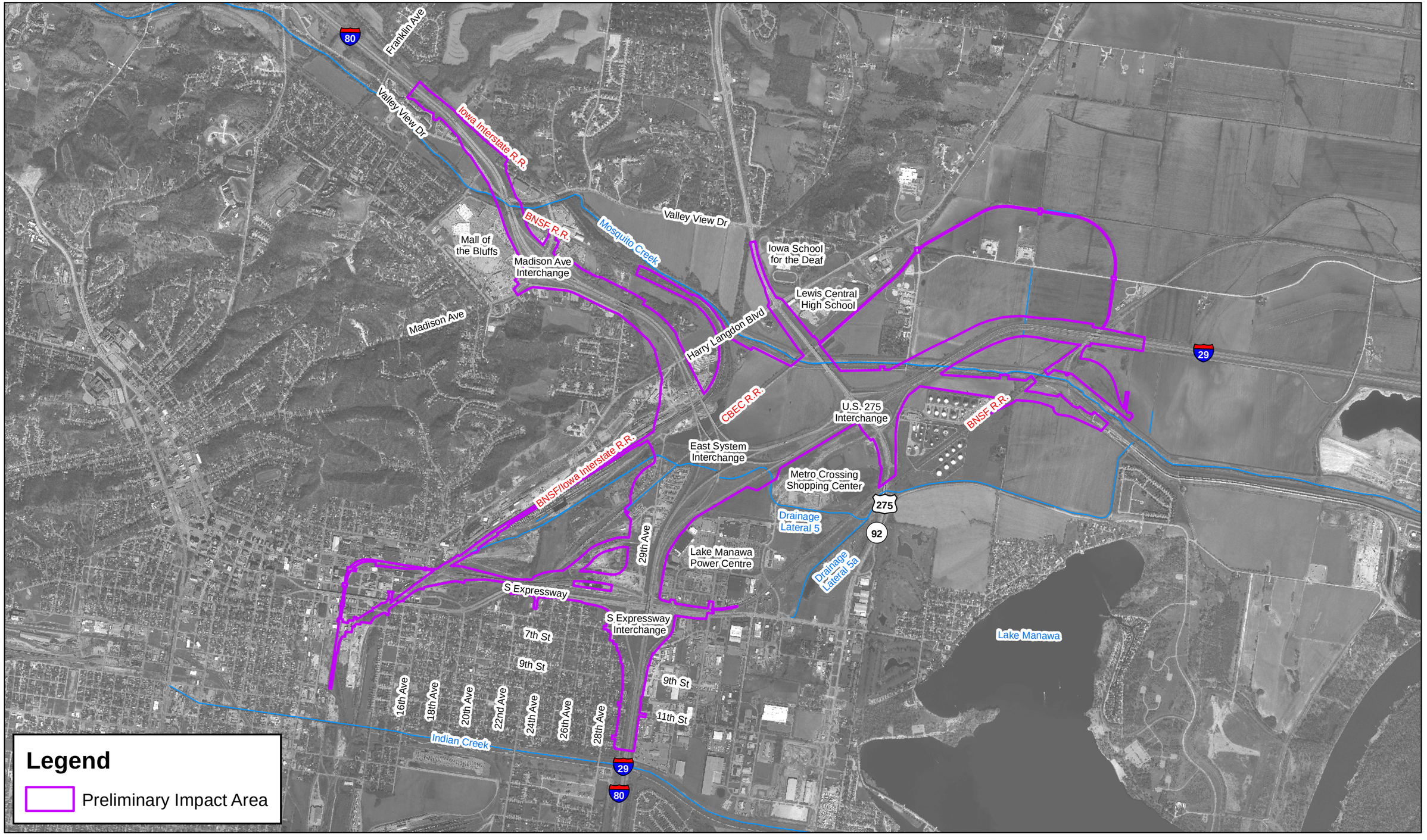
The 2006 biological evaluation that Iowa DOT conducted for Segments 1, 2, and 3 reported that no threatened and endangered species were detected and no potential habitat was detected for prairie bush clover, piping plover, and interior least tern (as well as for American ginseng, a Nebraska listed species). The 2010 biological evaluation for listed species or their habitat potentially within Segment 3 only identified the eastern massasauga rattlesnake as having potential habitat (characterized as marginal). Consequently, Revised Build Alternative B for Segment 3 would have no effect, and thus no cumulative effects, on all listed species except for the rattlesnake, which would not be adversely affected.

Of the three areas within Segment 3 of potential habitat identified for the eastern massasauga rattlesnake, Area 3C includes land heavily modified for the Metro Crossing development, Area 3I is along a railroad grade to be placed out-of-service with no scheduled reconstruction, and Area 3L contains three wetland areas and the developed or actively cultivated areas adjacent to the wetlands make it unlikely that the eastern massasauga rattlesnake would occur in the wetlands. Significant adverse cumulative impacts to the rattlesnake and its habitat are not expected because the area affected by the Segment 3 project is marginal habitat due to other area development.

The USFWS and Iowa DNR have concurred with the results of Iowa DOT's Determination of Effect, including an analysis of cumulative impacts, for the 2006 biological evaluations, and Iowa DNR has concurred with the results of the 2010 biological evaluations. See Appendix A for the concurrence letters.

3.16.6 Avoidance, Minimization, and Mitigation

Revised Build Alternative B is not projected to adversely affect threatened and endangered species or their habitat, either as an individual action or cumulatively, so no mitigation is necessary or proposed.



0 2,000 4,000 Feet

Iowa Department of Transportation

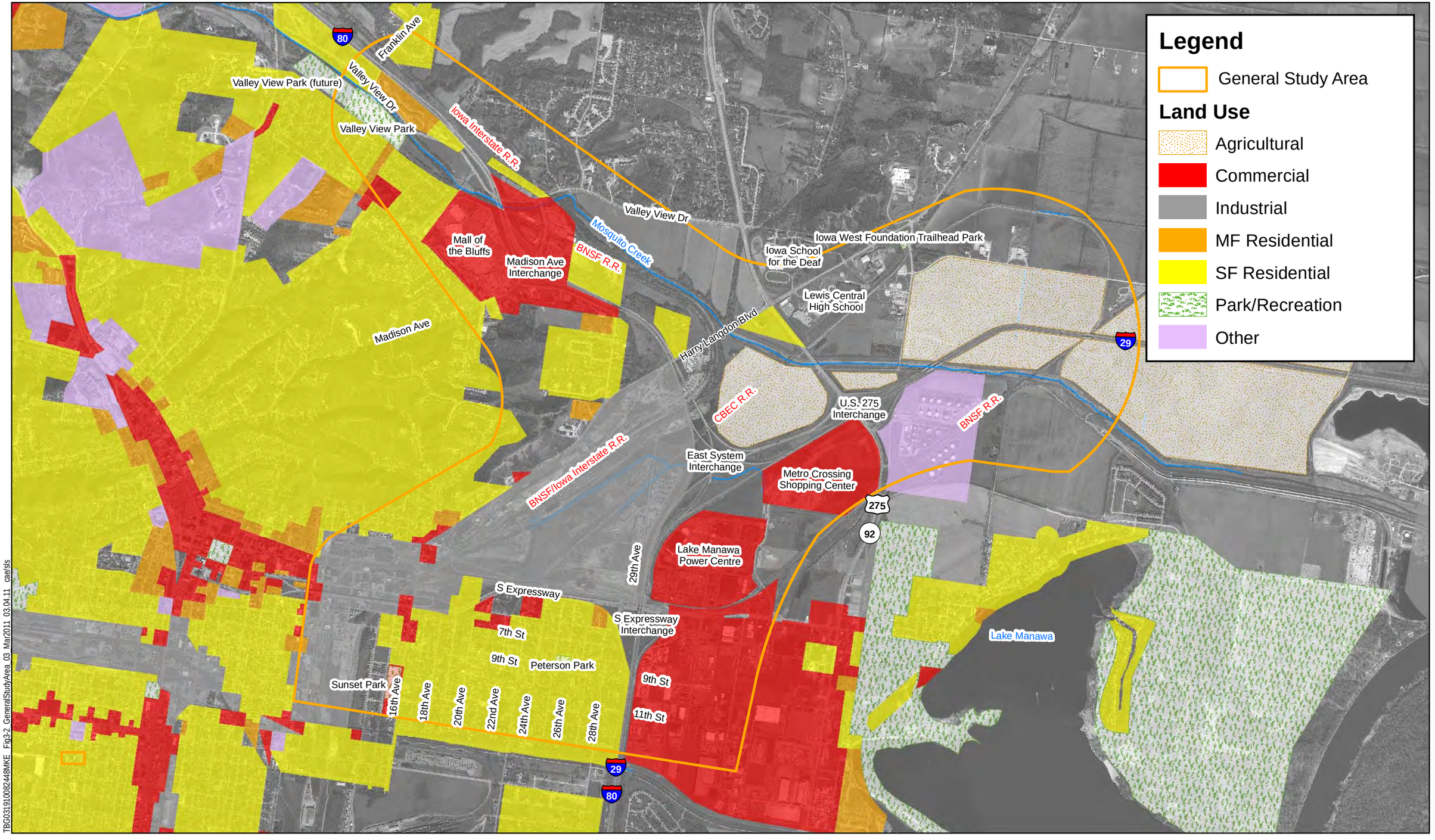
Sources:
1. Aerial Photography- MAPA, 2008

Tier 2 Preliminary Impact Area Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-1



TBG031910082448MKE Fig3-2 GeneralStudyArea 03 Mar2011 03.04.11 cae/sls

0 2,000 4,000 Feet

Iowa Department of Transportation

Sources:
1. Aerial Photography- MAPA, 2008
2. Land Use- Council Bluffs, 1994

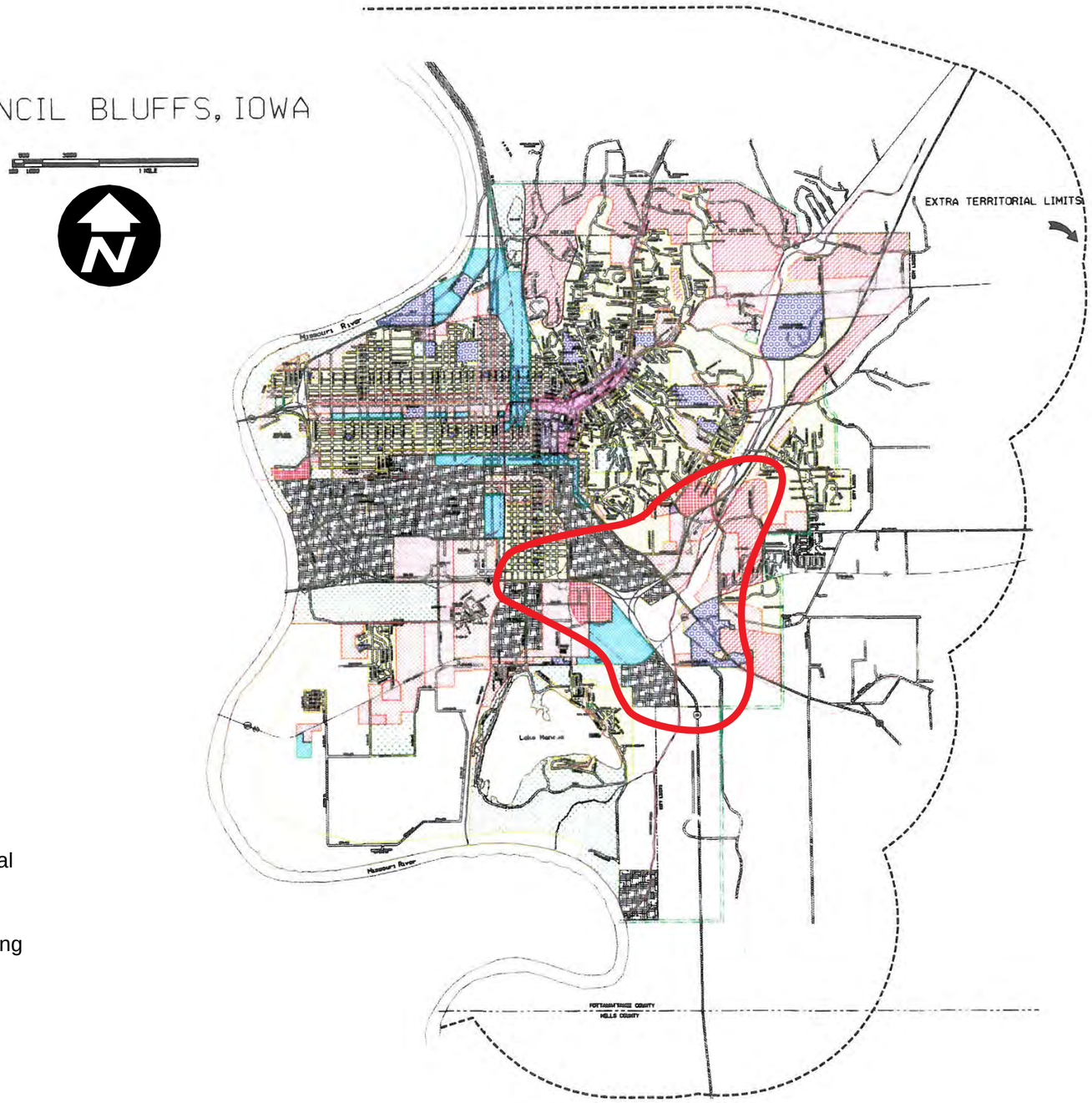
Study Area Land Use
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-2

COUNCIL BLUFFS, IOWA



LEGEND

- V - Vacant/Agriculture/Floodway
- PR - Parks/Recreation
- P - Public/Semipublic
- RE - Residential Estates
- RD - 1 & 2 Residential
- MH - Mobile Home Residential
- MF - Multi-Family Residential
- A - Administrative/Professional
- C - Highway/General Commercial
- DC - Downtown Commercial
- PC - Planned Commercial
- LI - Wholesale/Light Manufacturing
- HI - Heavy Manufacturing
- Study Area

Source: Council Bluffs Comprehensive Plan

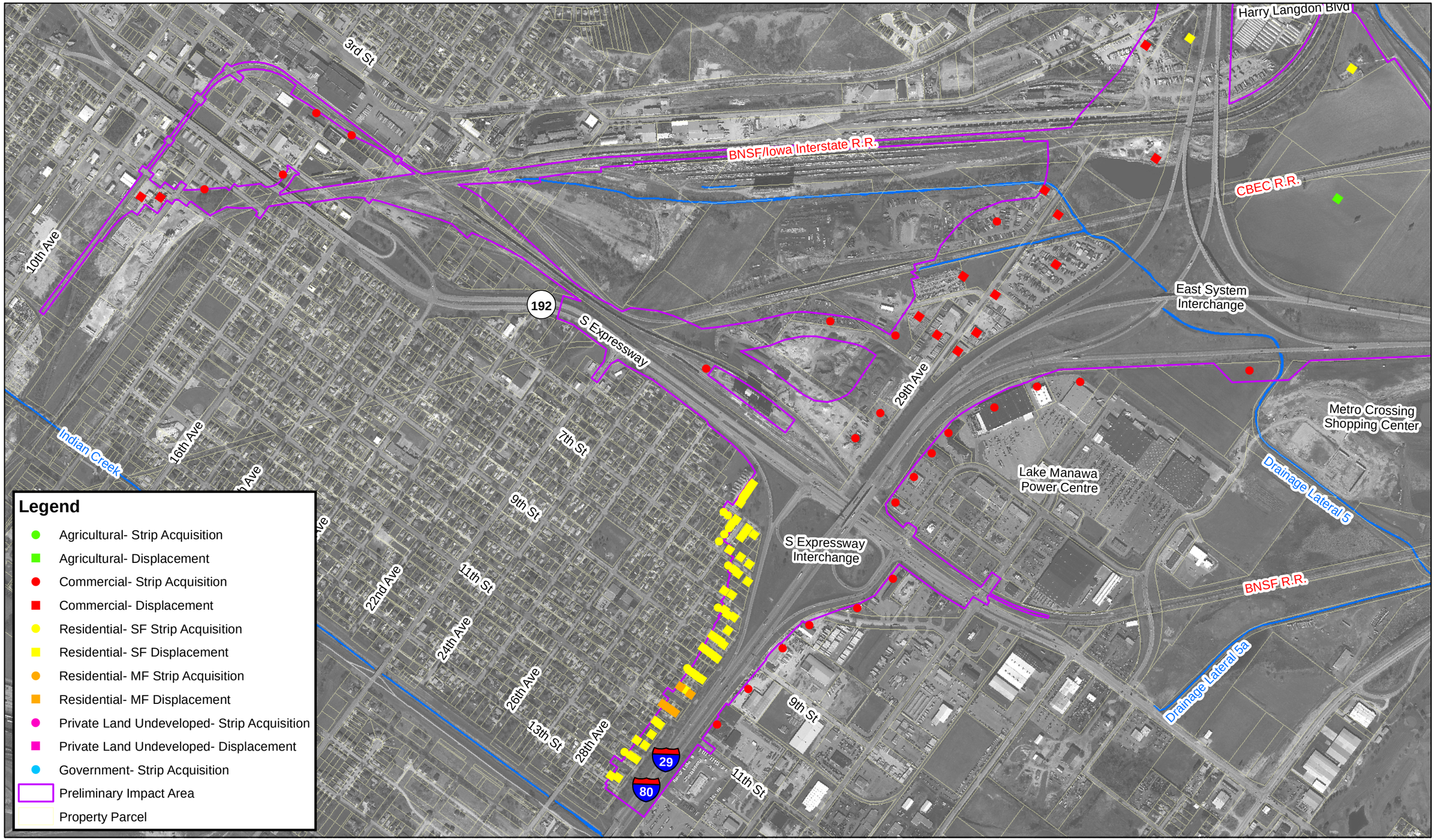
Iowa Department of Transportation

Future Land Use
Segment 3

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
3-3



0 850 1,700 Feet

Iowa Department of Transportation

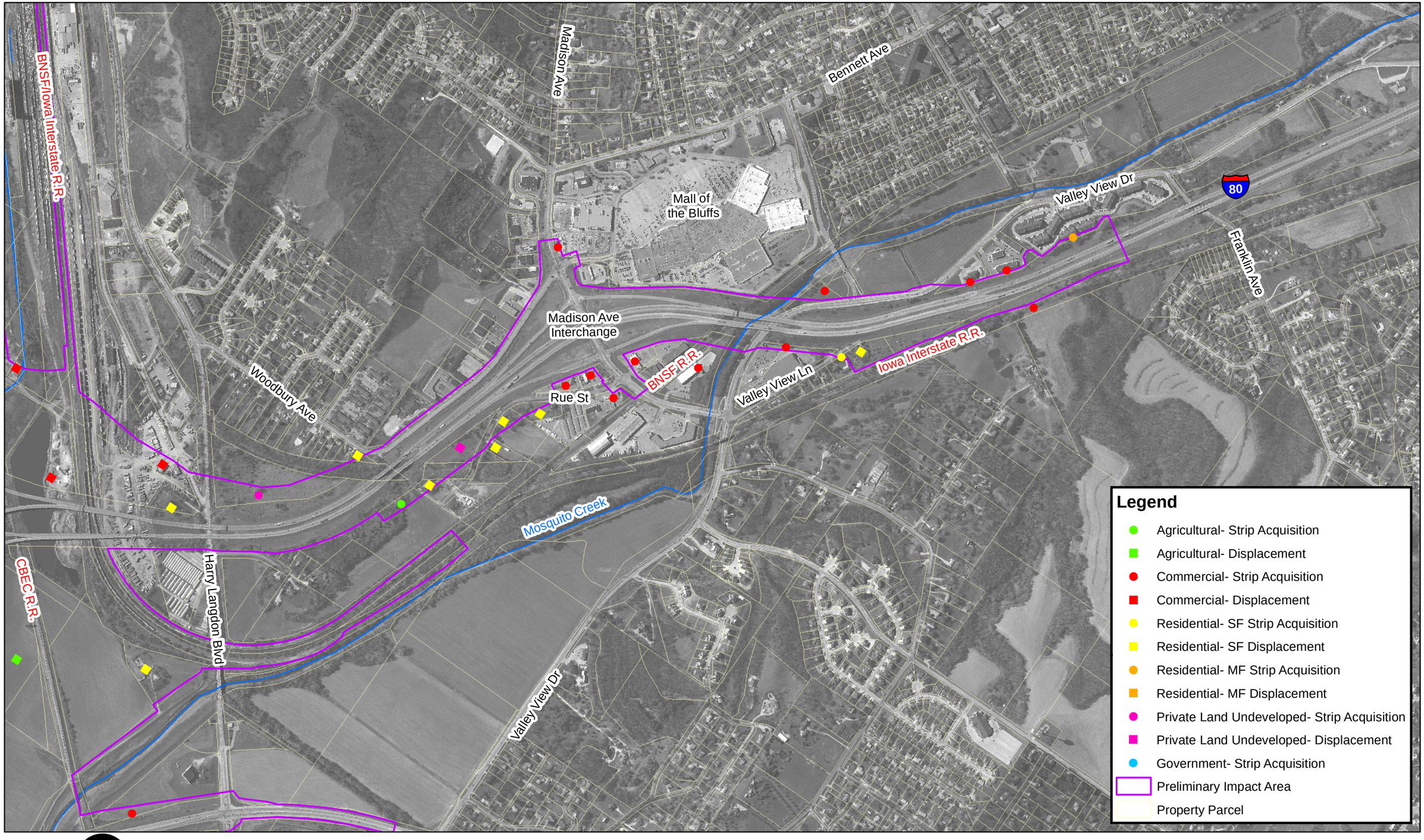
Sources:
1. Aerial Photography- MAPA, 2008
2. Affected Properties- CH2M HILL, 2010
3. Property Parcels- Pottawattamie County GIS, 2008

Affected Properties
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-4A



0 850 1,700 Feet

Iowa Department of Transportation

Sources:
1. Aerial Photography- MAPA, 2008
2. Affected Properties- CH2M HILL, 2010
3. Property Parcels- Pottawattamie County GIS, 2008

Affected Properties
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-4B

0 850 1,700 Feet

Iowa Department of Transportation

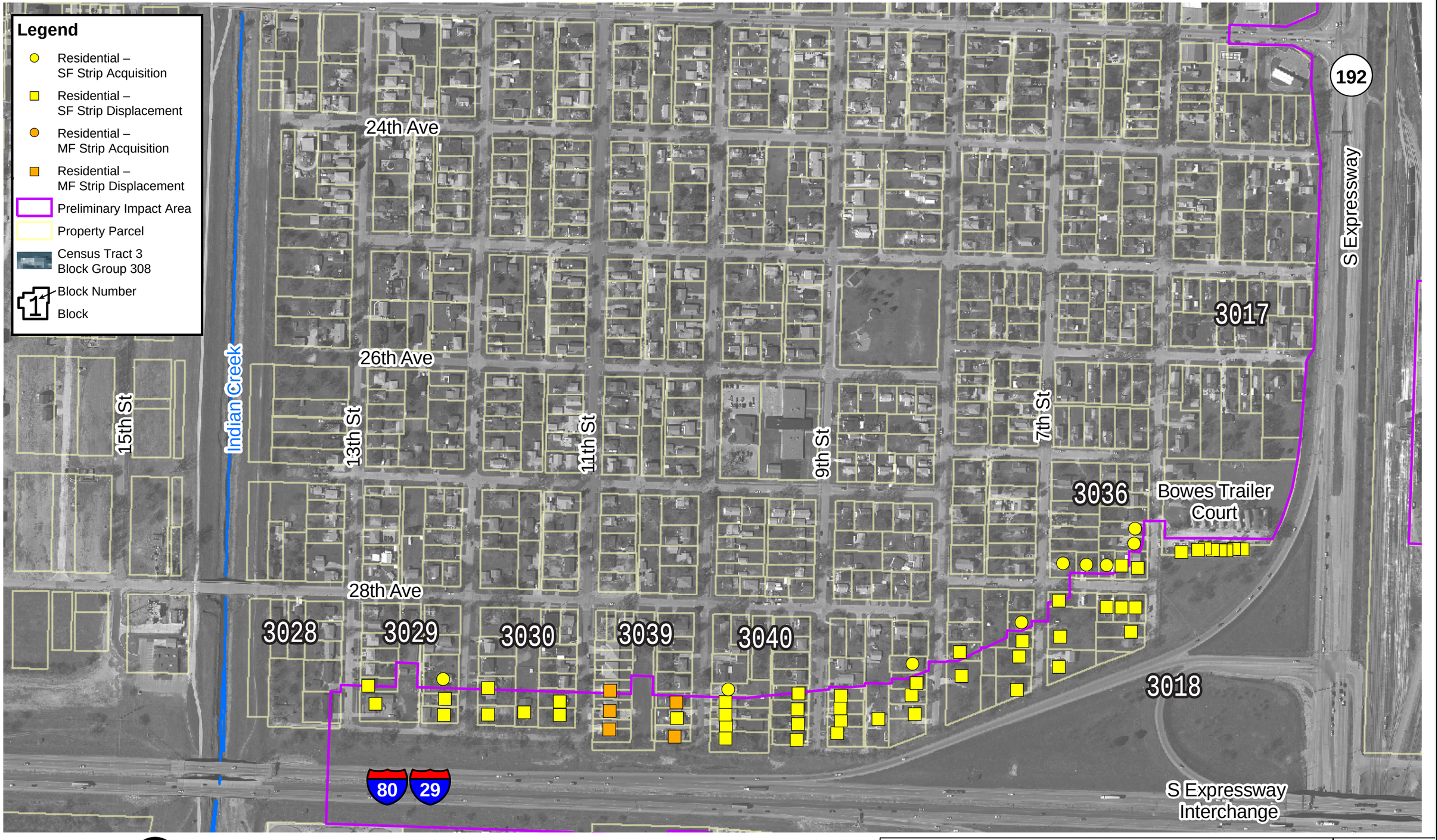
Sources:
1. Aerial Photography- MAPA, 2008
2. Affected Properties- CH2M HILL, 2010
3. Property Parcels- Pottawattamie County GIS, 2008

Affected Properties
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-4C



0 455 910 Feet

Sources:
1. Aerial Photography- MAPA, 2008
2. Affected Properties- CH2M HILL, 2010
3. Property Parcels- Pottawattamie County GIS, 2008

Iowa Department of Transportation

Study Area Census Blocks

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
3-5

Sources:
1. Aerial Photography- MAPA, 2008
2. Wetlands- Iowa DOT, 2010

Wetlands
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-6A

Legend

- Preliminary Impact Area
- 51 Delineated Wetland

0 850 1,700 Feet

Iowa Department of Transportation

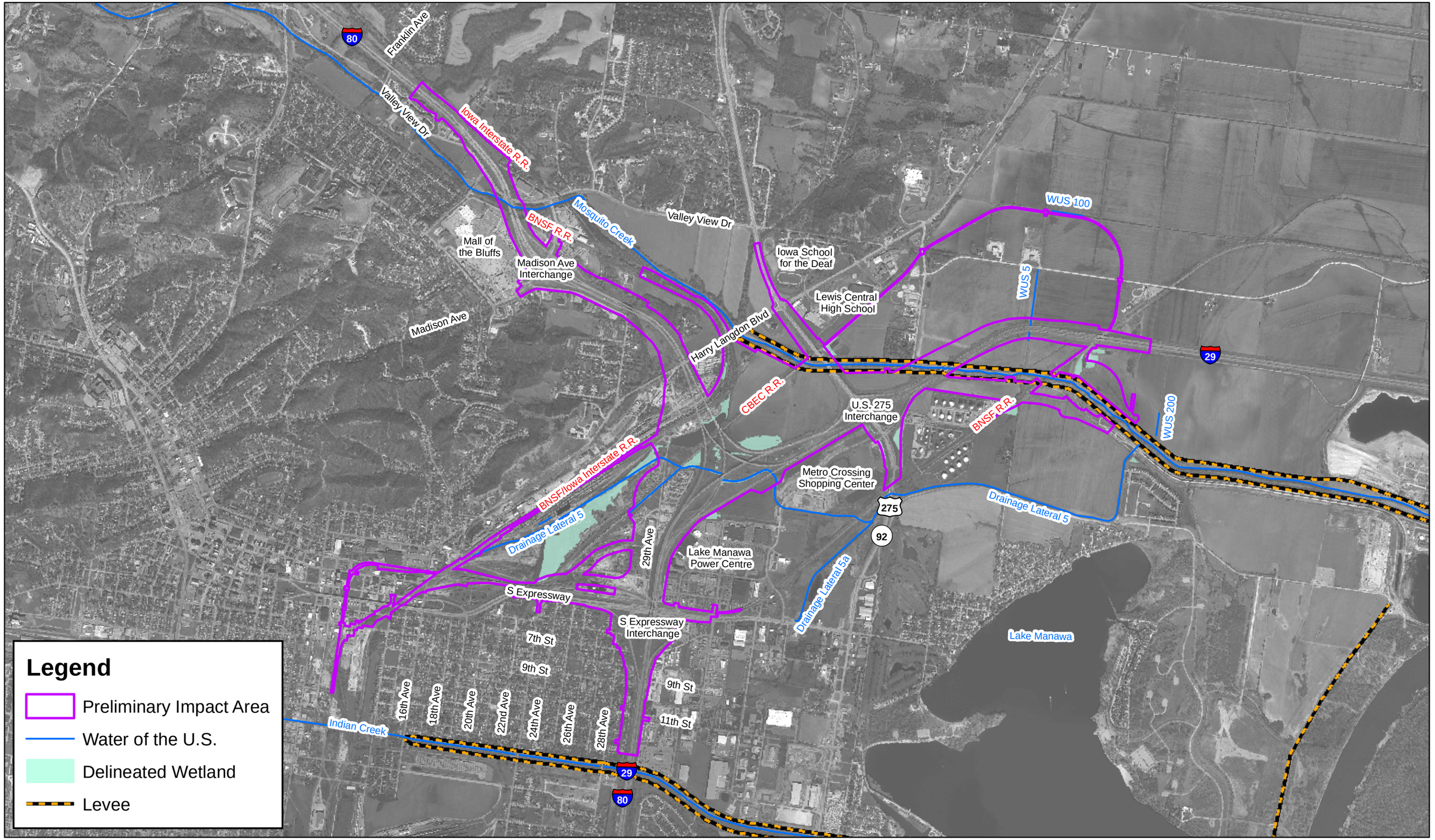
Sources:
1. Aerial Photography- MAPA, 2008
2. Wetlands- Iowa DOT, 2010

Wetlands
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-6B



0 2,000 4,000 Feet

Iowa Department of Transportation

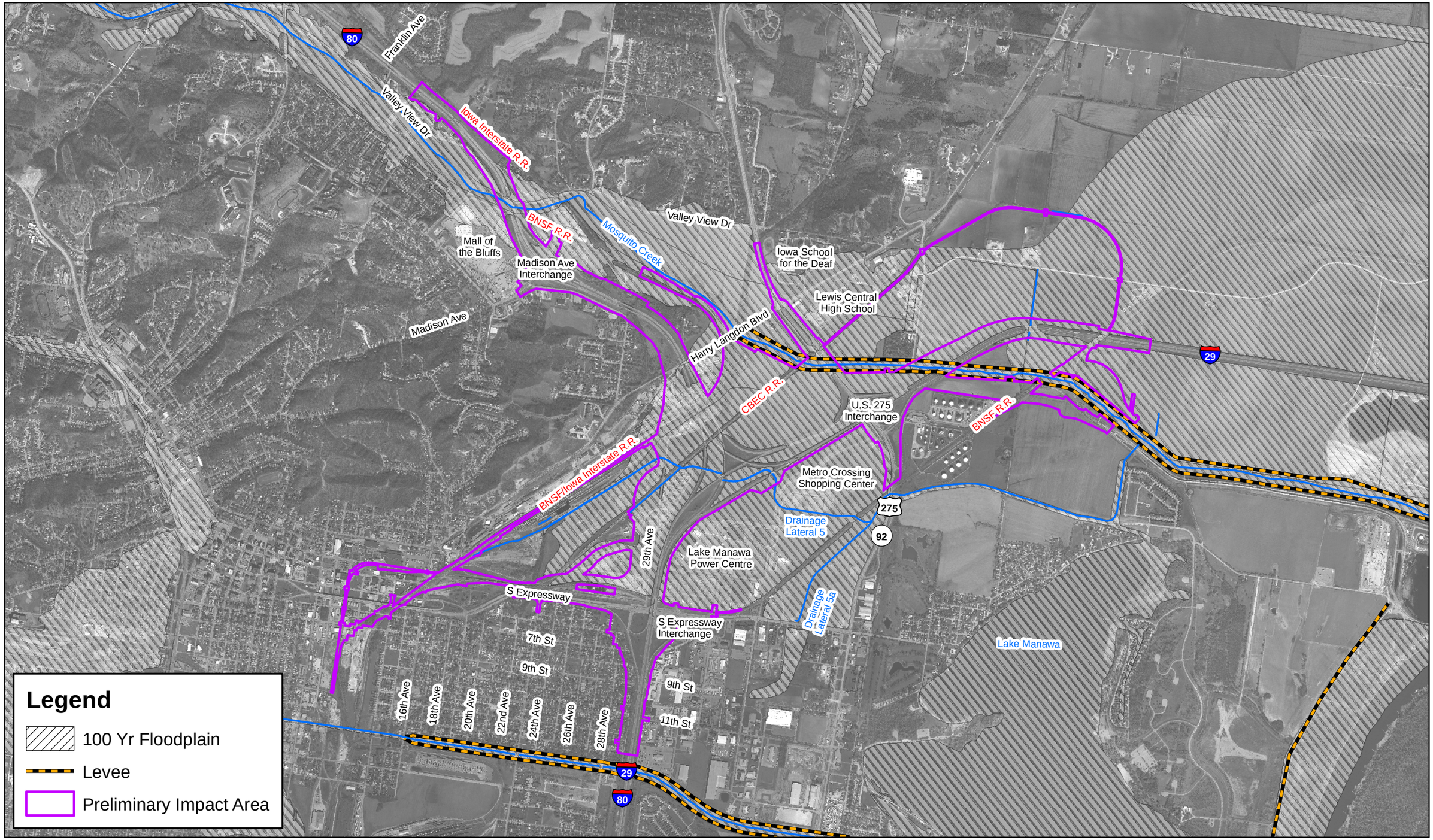
Sources:
1. Aerial Photography- MAPA, 2008
2. Waters of the U.S.- HDR Engineering, 2005, 2008
3. Wetlands- Iowa DOT, 2010

Waters of the U.S.
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-7



0 2,000 4,000 Feet

Iowa Department of Transportation

Sources:
1. Aerial Photography- MAPA, 2008
2. Floodplain- FEMA DFIRM, Feb 2005

100 Year Floodplain
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-8

0 850 1,700 Feet

Iowa Department of Transportation

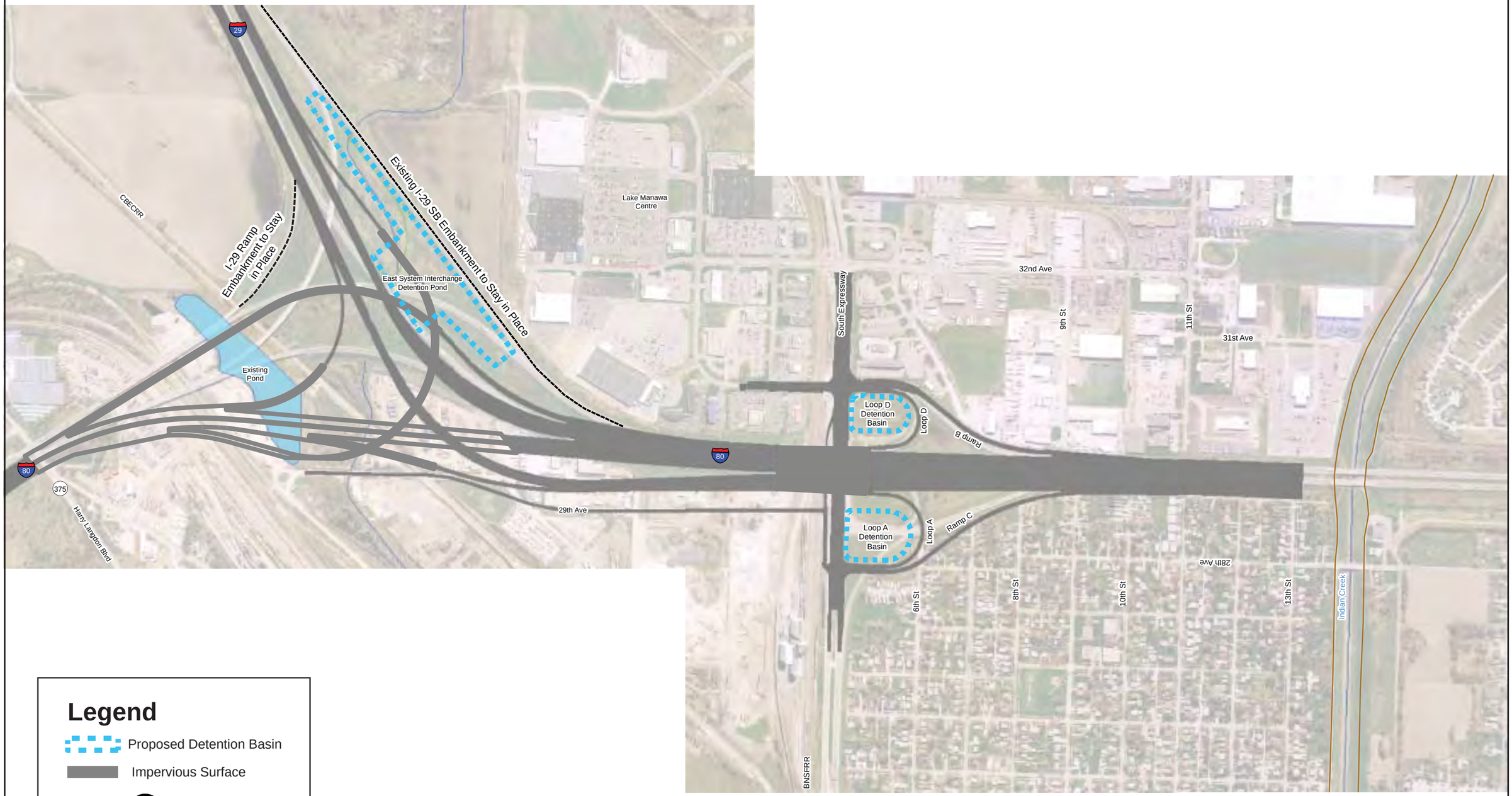
Sources:
1. Aerial Photography- MAPA, 2008
2. Floodway- FEMA DFIRM, Feb 2005

Mosquito Creek Floodway
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-9



Legend

Proposed Detention Basin

Impervious Surface

0 360 720 Feet

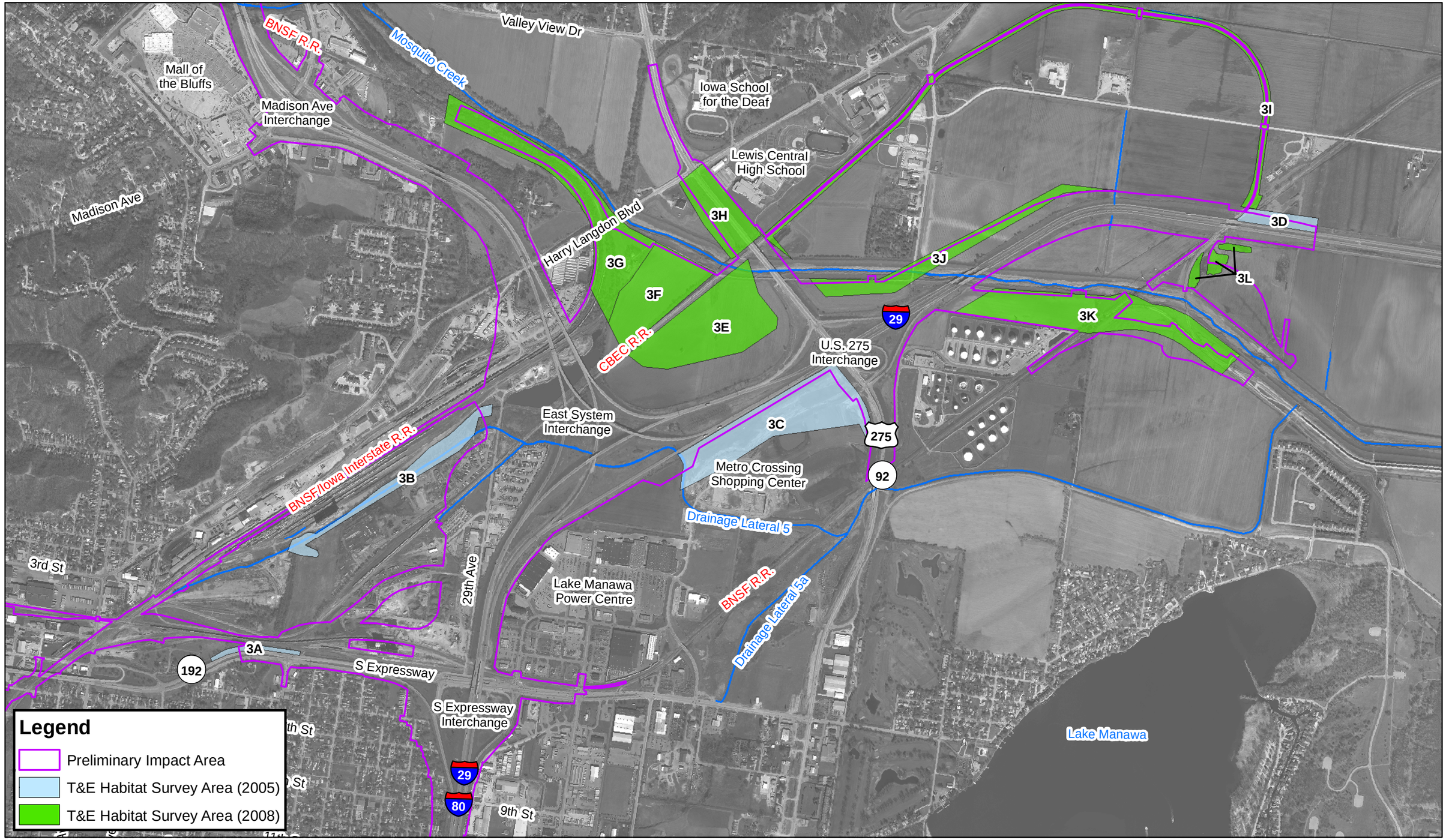
Iowa Department of Transportation

STORMWATER DETENTION
Segment 3

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
3-10



0 1,250 2,500 Feet

Iowa Department of Transportation

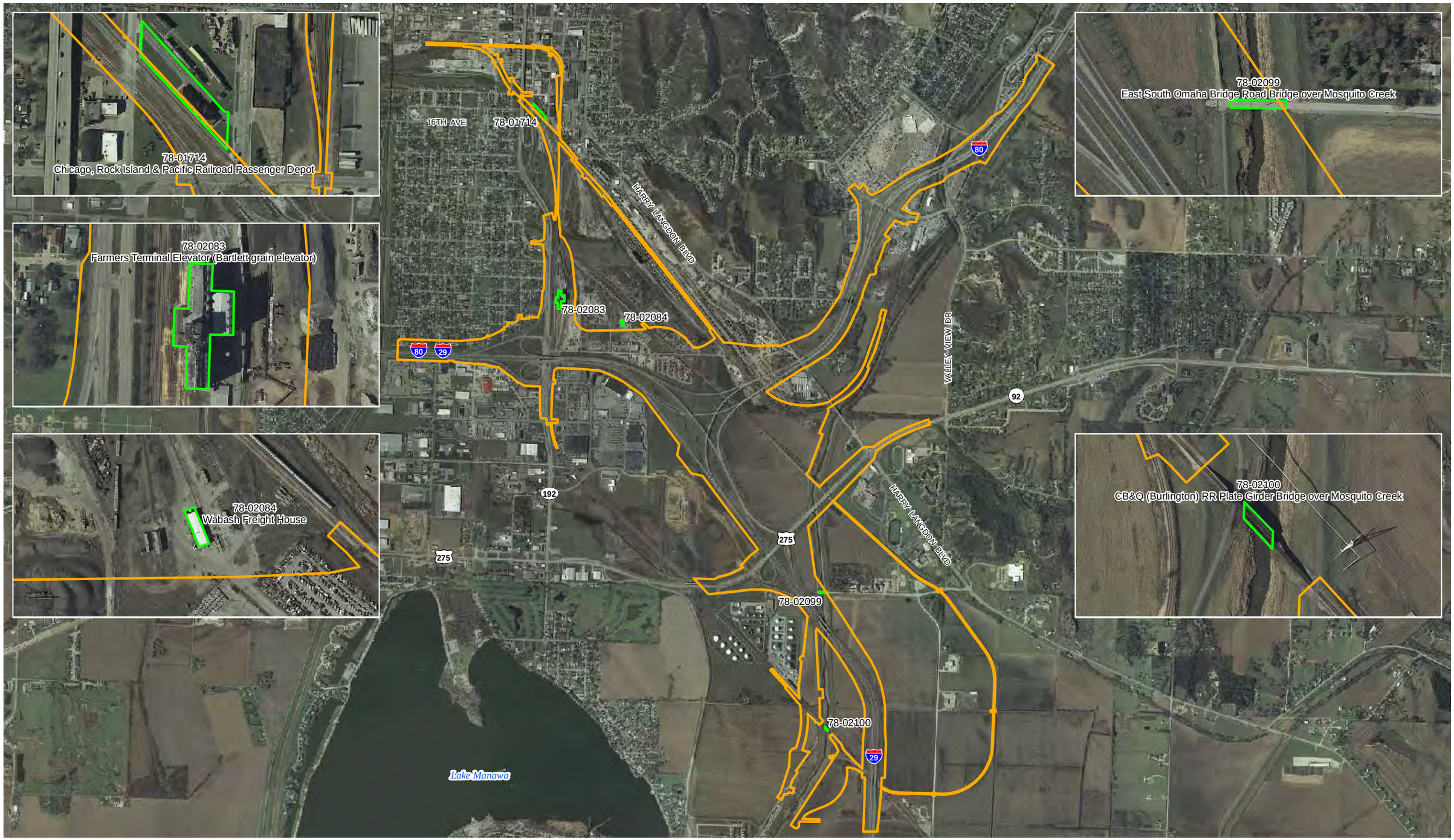
Sources:
1. Aerial Photography- MAPA, 2008
2. T&E Habitat Survey Area- CH2M HILL, 2005, 2008

Threatened and Endangered Species Habitat Area Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-11



2,000 1,000 0 2,000 Feet

Scale

Legend

- Revised Build Alternative B Preliminary Impact Area
- Historic Property

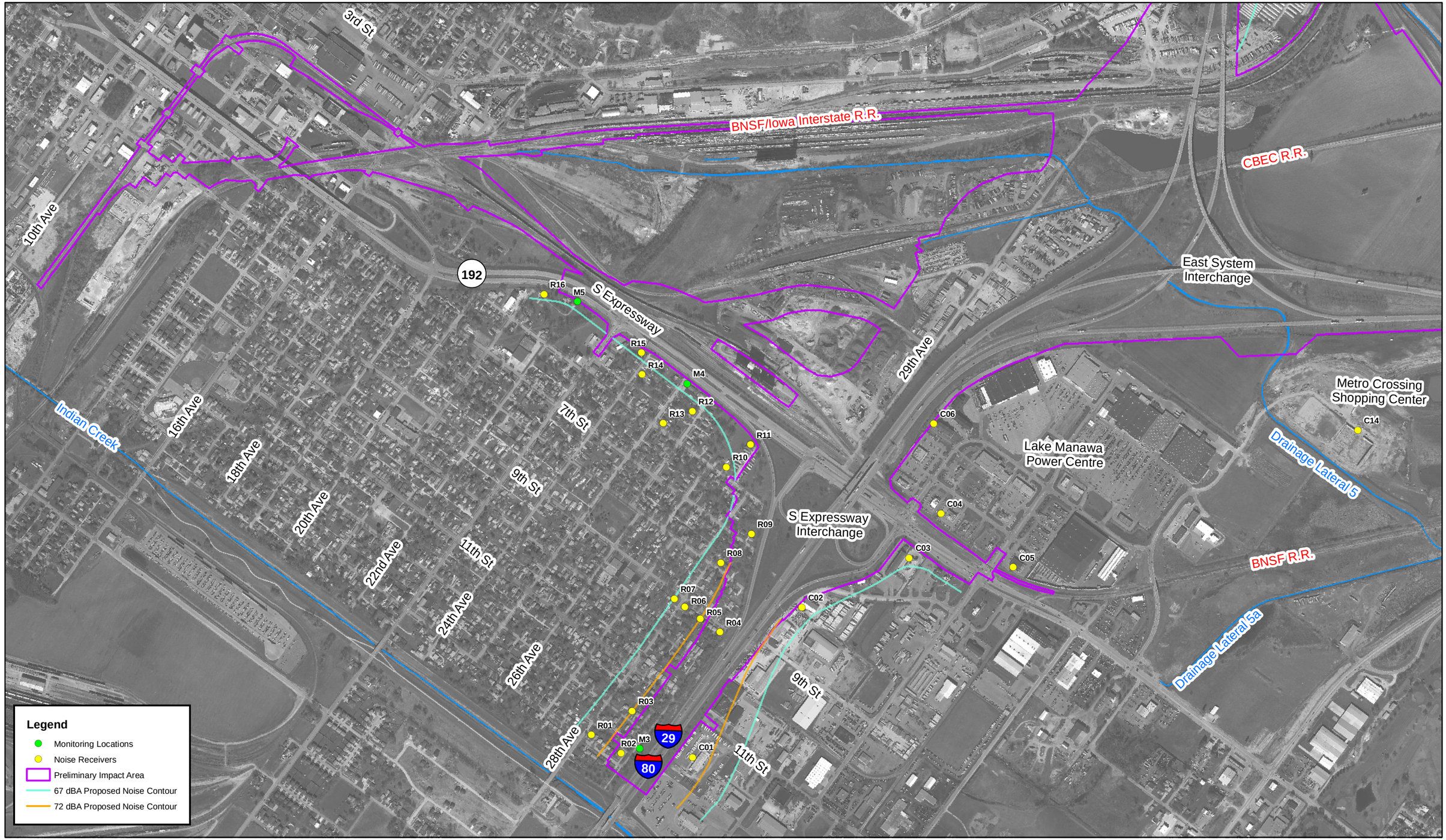
Iowa Department of Transportation

Historic Properties – Segment 3

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
3-12



0 850 1,700 Feet

Iowa Department of Transportation

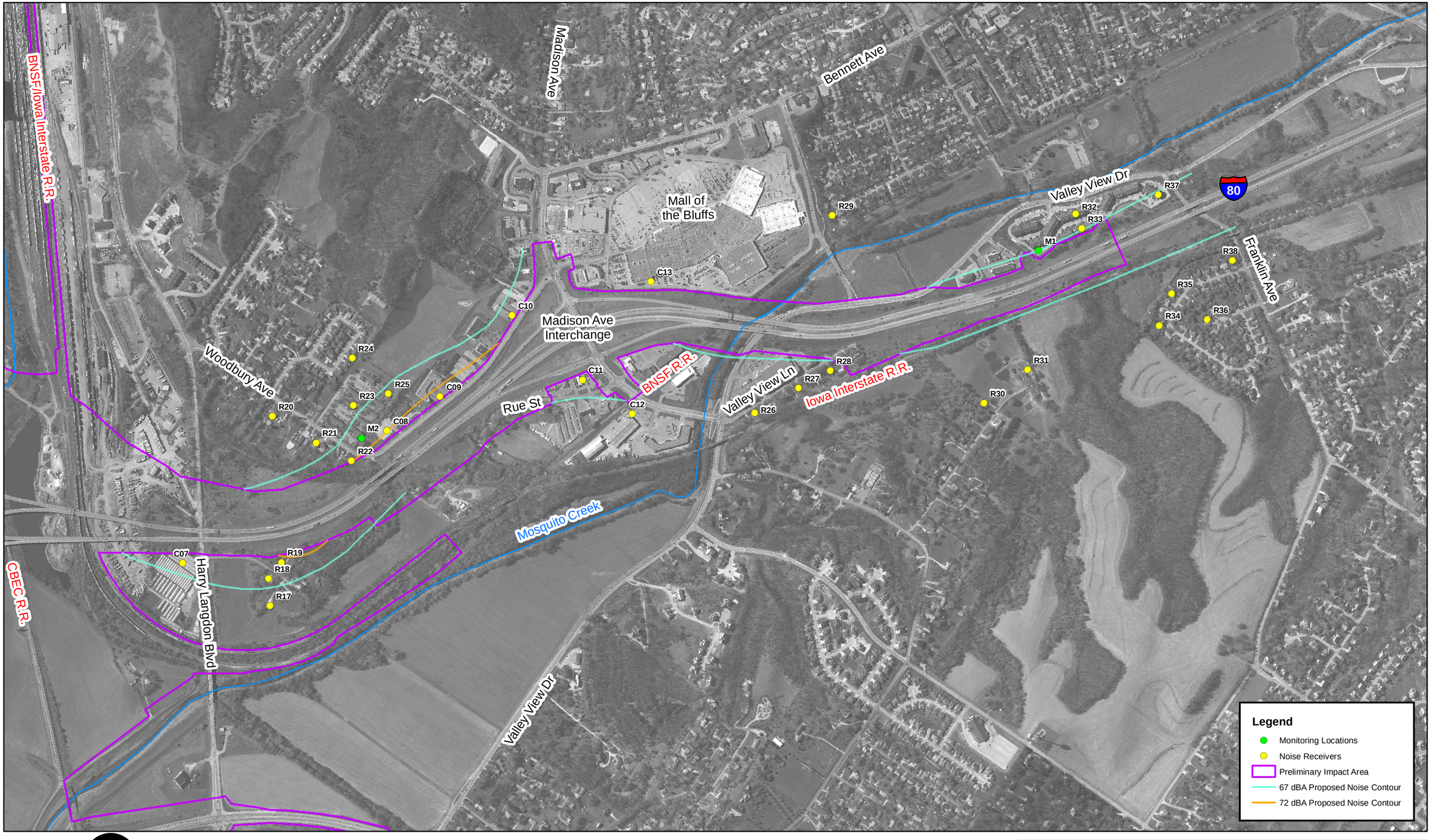
Sources:
1. Aerial Photography- MAPA, 2008
2. Proposed Noise Contours- CH2M HILL, 2010
*In some locations, noise contours are located within the preliminary impact area and are not shown on the graphics.

Noise Receiver Locations Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-13A



0 850 1,700 Feet

Iowa Department of Transportation

Sources:
1. Aerial Photography- MAPA, 2008
2. Proposed Noise Contours- CH2M HILL, 2010
*In some locations, noise contours are located within the preliminary impact area and are not shown on the graphics.

Noise Receiver Locations
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-13B

0 850 1,700 Feet

Iowa Department of Transportation

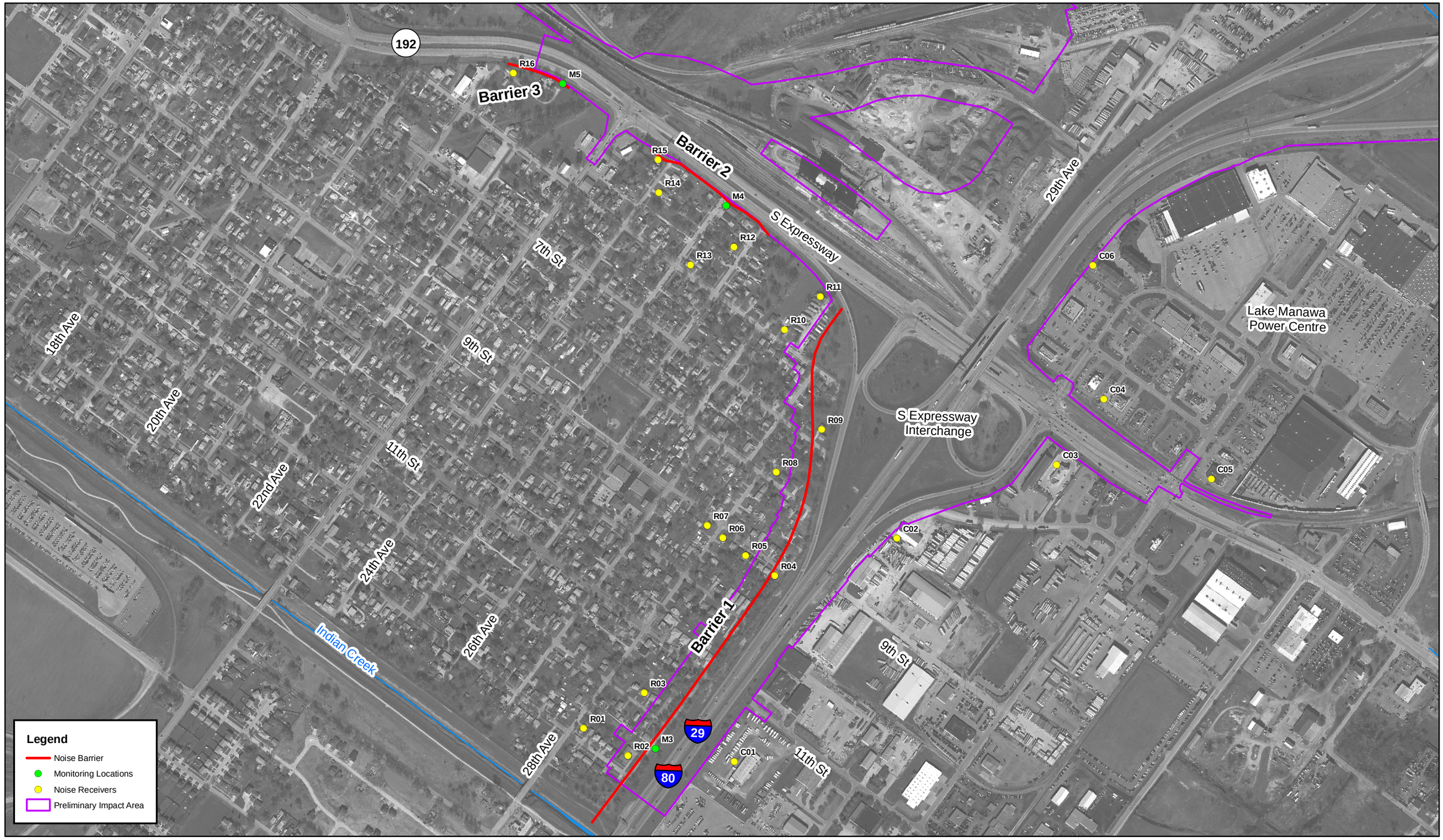
Sources:
1. Aerial Photography- MAPA, 2008
2. Proposed Noise Contours- CH2M HILL, 2010
*In some locations, noise contours are located within the preliminary impact area and are not shown on the graphics.

Noise Receiver Locations
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-13C



0 550 1,100 Feet

Iowa Department of Transportation

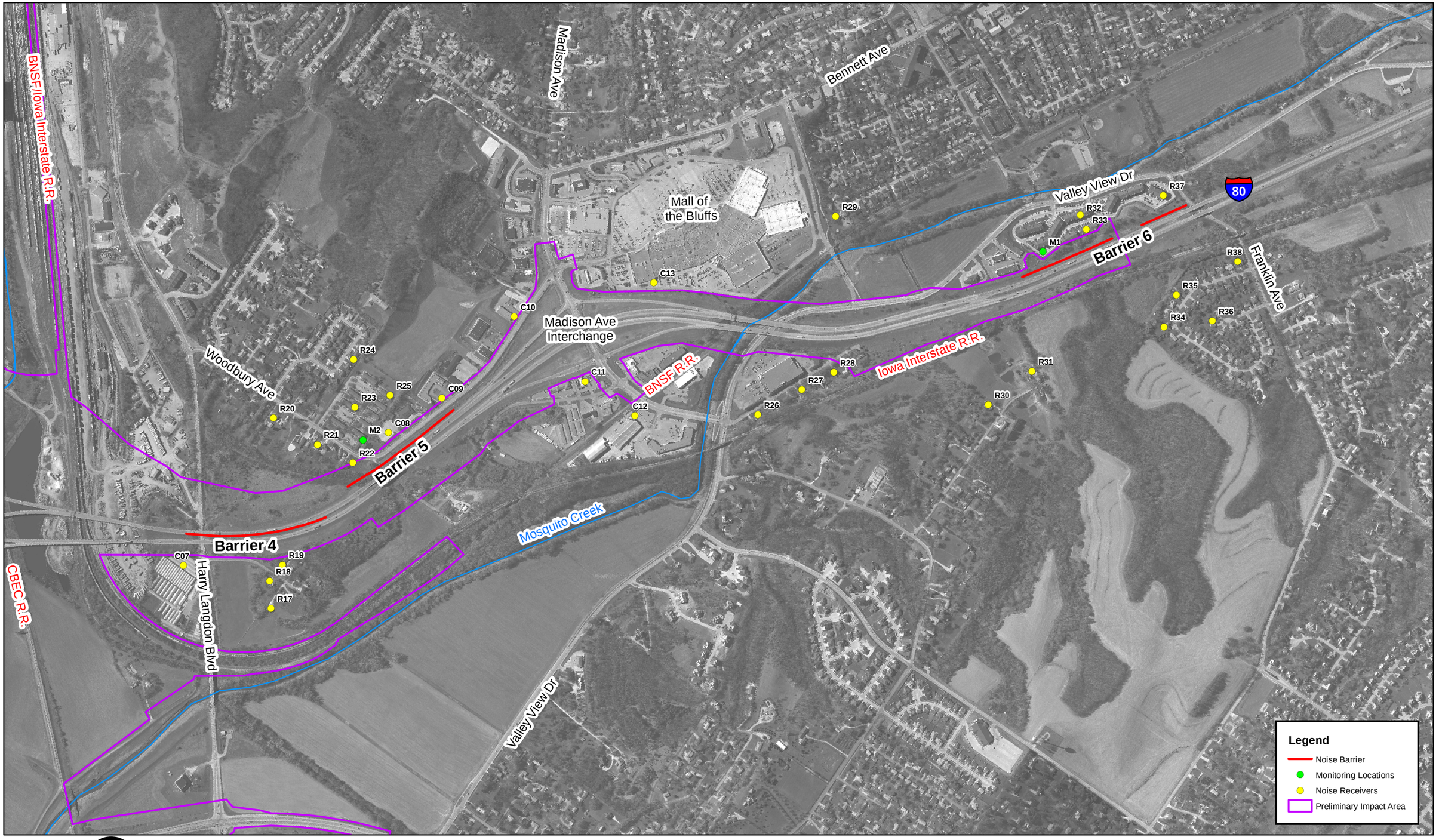
Sources:
1. Aerial Photography- MAPA, 2008
2. Noise Barrier- CH2M HILL, 2010

Noise Barrier Locations
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-13D



0 850 1,700 Feet

Iowa Department of Transportation

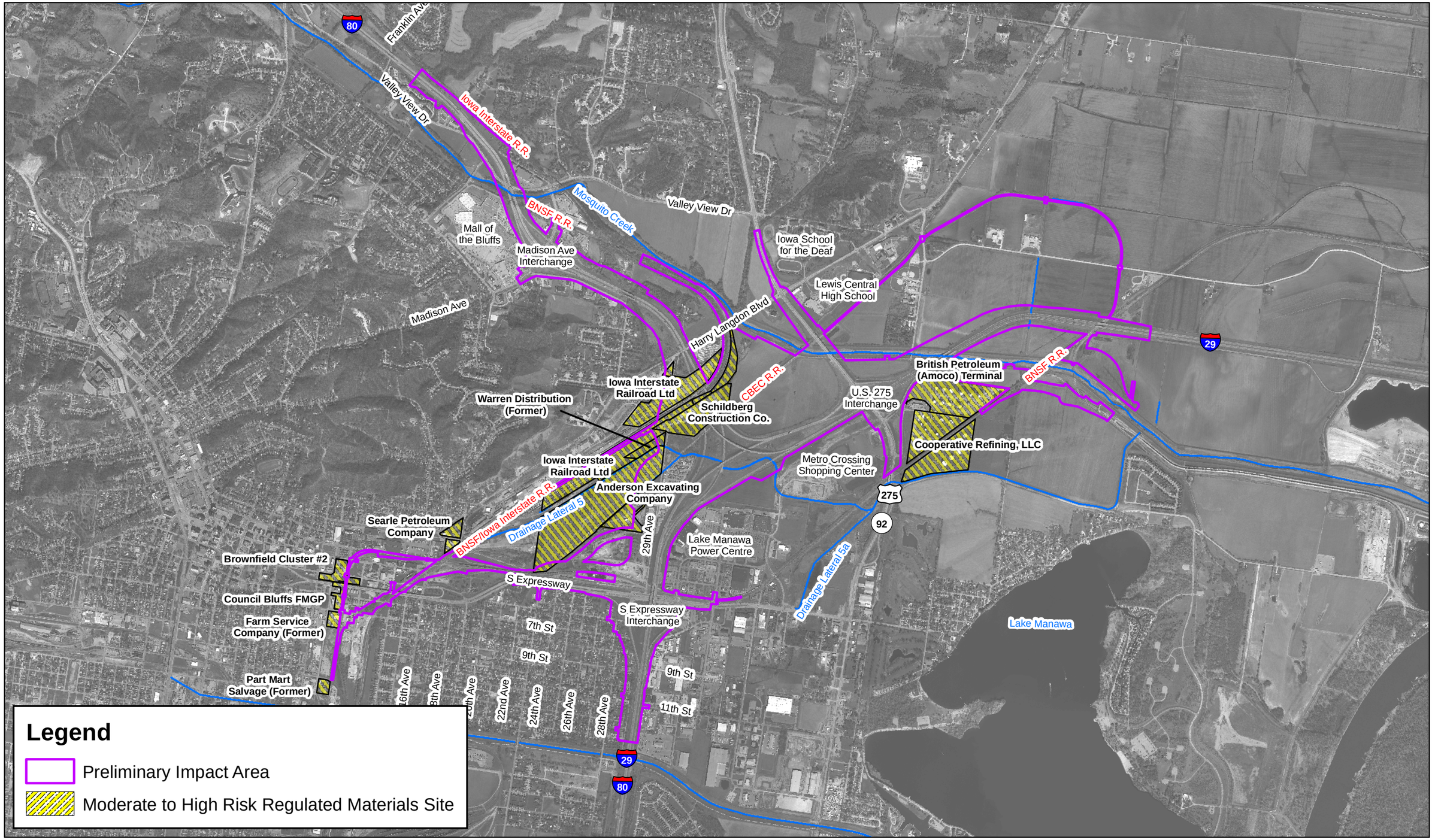
Sources:
1. Aerial Photography- MAPA, 2008
2. Noise Barrier- CH2M HILL, 2010

Noise Barrier Locations
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-13E



0 1,950 3,900 Feet

Iowa Department of Transportation

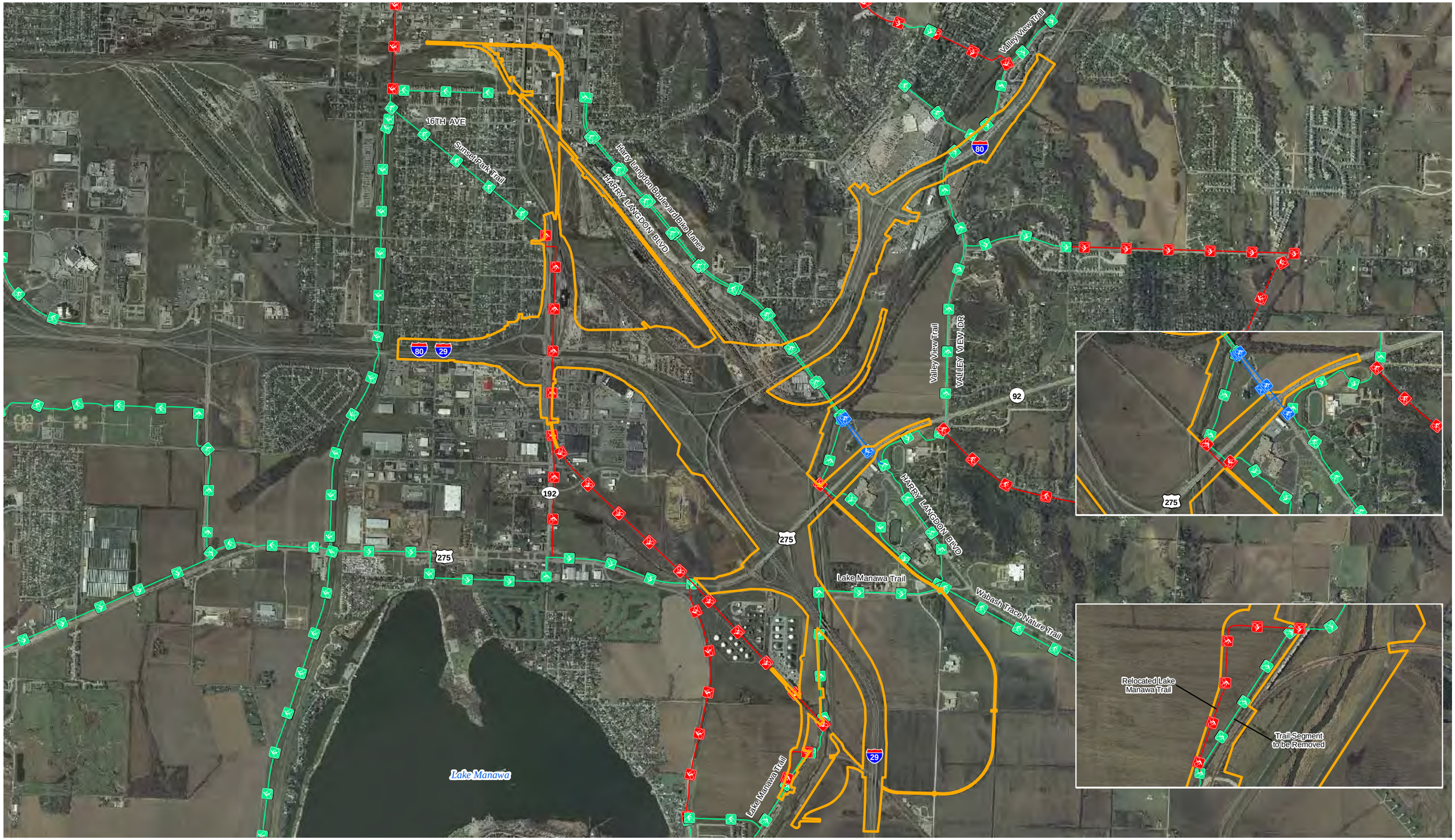
Sources:
1. Aerial Photography- MAPA, 2008
2. Regulated Materials- HDR Engineering, 2006 & 2008

Potential REC Sites
Segment 3

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA

DATE
March 2011

FIGURE
3-14



2,000 1,000 0 2,000 Feet

Scale

Legend

- Revised Build Alternative B Preliminary Impact Area
- Existing Trail
- Proposed Trail
- Potential Bike Lane

Iowa Department of Transportation

Trails – Segment 3

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
3-15

TB022008004MKE Fig3-15_Trails_05_Mar2011 03.04.11 cae

Valley View Park (future)

Valley View Park

Sunset Park

16TH AVE

HARRY LANGDON BLVD

Peterson Park

VALLEY VIEW DR

Lewis Central Practice Fields

Iowa West Foundation Trailhead Park

Lake Manawa

2,000 1,000 0 2,000

Feet

Scale

Legend

- Revised Build Alternative B Preliminary Impact Area
- Park
- Future Park Expansion
- Recreation Area

Iowa Department of Transportation

Parks and Recreation Areas – Segment 3

Council Bluffs Interstate System Improvements
Council Bluffs, IA

DATE
March 2011

FIGURE
3-16

4. Disposition 4-1
4.1 Federal Agencies 4-1
4.2 State Agencies 4-1
4.3 Local/Regional Units of Government 4-1
4.4 Other 4-2
4.5 Locations Where This Document Is Available for Public Review 4-2

Section 4
Disposition

SECTION 4

Disposition

The Tier 2, Segment 3 EA is being distributed to the following agencies and organizations. Individuals receiving the document are not listed for privacy reasons.

4.1 Federal Agencies

Federal Aviation Administration
Federal Emergency Management Agency
Federal Railroad Administration
Federal Transit Administration
Small Business Administration
Surface Transportation Board
U.S. Army Corps of Engineers, Rock Island District
U.S. Army Corps of Engineers, Omaha District, Planning
U.S. Department of Agriculture Natural Resources Conservation Service
U.S. Department of Health and Human Services, Centers for Disease Control and Prevention
U.S. Department of Housing and Urban Development
U.S. Department of the Interior, Office of Environmental Policy and Compliance
U.S. Environmental Protection Agency, Region 7
U.S. Fish and Wildlife Service, Rock Island Field Office

4.2 State Agencies

Iowa Department of Natural Resources, Atlantic Field Office
Iowa Department of Natural Resources, Environmental Services
State Historical Society of Iowa, Department of Cultural Affairs

4.3 Local / Regional Units of Government

Pottawattamie County Planning
Pottawattamie County Board of Supervisors
Pottawattamie County Engineer
Pottawattamie County Conservation Board
Council Bluffs Chamber of Commerce
City of Council Bluffs Community Development Department
City of Council Bluffs (Mayor and Council)
City of Council Bluffs Parks, Recreation, and Public Property Department
City of Council Bluffs Public Works Department
Metro (formerly Metro Area Transit)
Metropolitan Area Planning Agency

4.4 Other

Burlington Northern and Santa Fe Railway
Council Bluffs Energy Center
Council Bluffs Historical Society
Iowa Interstate Railroad Ltd.
Southwest Iowa Renewable Energy LLC

4.5 Locations Where This Document Is Available for Public Review

Council Bluffs Public Library
400 Willow Avenue
Council Bluffs, IA 51503

Federal Highway Administration
105 6th Street
Ames, IA 50010

Iowa Department of Transportation
2210 E. Seventh Street
Atlantic, IA 50022

Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

5. Comments and Coordination 5-1
5.1 Agency Coordination 5-1
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5.3 Tribal Coordination 5-7

Section 5

Comments and Coordination

SECTION 5

Comments and Coordination

This section includes a summary of agency coordination, public involvement, and tribal coordination that has taken place during development of the project. Appendix A contains agency coordination letters generated during the EA.

In addition to the agency coordination that has occurred as described in the section below, the Surface Transportation Board (STB) has been invited to be a cooperating agency because of their role in approval of changes to rail service. This document was provided to STB for its review, comment, and approval.

5.1 Agency Coordination

5.1.1 Early Agency Coordination

An early coordination packet for Segments 1, 2, and 3 was mailed to federal, state, and local resource agencies on March 13, 2006. The packet contained background information on the CBIS Improvements Project description (including the Tier 1 and Tier 2 processes) anticipated impacts, and development procedures. Feedback was sought from the agencies on their issues of concern and their background knowledge of the project area. The following agencies were contacted as part of the early coordination efforts:

- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Railroad Administration
- Federal Transit Administration
- Iowa Department of Natural Resources
- Metro (formerly Metro Area Transit)
- Metropolitan Area Planning Agency
- Papio-Missouri River Natural Resources District
- Pottawattamie County Conservation Board
- Small Business Administration
- State Historical Society of Iowa
- Nebraska Department of Environmental Quality
- Nebraska Department of Natural Resources
- Nebraska Game and Parks Commission
- Nebraska State Historical Society
- U.S. Army Corps of Engineers—Omaha and Rock Island Districts
- U.S. Coast Guard
- U.S. Department of Agriculture Natural Resources Conservation Service
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior, National Park Service

- U.S. Department of the Interior, Office of Environmental Policy and Compliance
- U.S. Environmental Protection Agency—Region 7
- U.S. Fish and Wildlife Service—Grand Island and Rock Island Field Offices

Of the six agencies that responded to the March 2006 packet, three were from Nebraska and have no connection to Segment 3. The three agencies relevant to activities in Segment 3 include: USACE, USFWS, and the U.S. Department of Housing and Urban Development (HUD). The USACE noted that they would provide comments at the April 26, 2006, NEPA/404 coordination meeting, and the USFWS indicated that there has not been any notable change to the federally protected species in the CBIS project area since Tier 1. The HUD representative did not foresee any detrimental effects on its projects in the CBIS project area. (Appendix A contains the three letters relevant to Segment 3.)

5.1.2 NEPA / 404 Merge Coordination

FHWA and Iowa DOT coordinated with resource agencies using the Iowa DOT concurrence point process during both Tier 1 and Tier 2 of the CBIS Improvements Project. The process incorporates planning, design, agency coordination, and public involvement elements, and it integrates compliance with NEPA and Section 404 of the Clean Water Act. The transportation agencies request concurrence from the resource agencies regarding four points: Purpose and Need, Alternatives to be Analyzed, Alternatives to be Carried Forward, and the Preferred Alternative. The intent of the concurrence point process is to encourage early participation by the regulatory agencies in an effort to validate decisions made by the transportation agency during the NEPA process, and to avoid revisiting those decisions after significant effort has been expended performing detailed analyses and design.

The transportation and resource agencies agreed that Tier 1 would include Concurrence Points 1, 2, 3, and 4 and that Tier 2 would include Concurrence Points 2, 3, and 4 for each segment. The agencies agreed that Concurrence Point 1 was not necessary for Tier 2 because the purpose of and need for the project was established and concurred upon in Tier 1.

5.1.2.1 Concurrence Points 2 and 3, Tier 2 (2006)

Concurrence Points 2 and 3 for Segments 1, 2, and 3 were addressed at a meeting held on April 26, 2006. At the meeting, all participants (USACE–Omaha District, USACE–Rock Island District, Iowa DNR, and Nebraska Game and Parks Commission) concurred[1] on Concurrence Point 2, Alternatives to be Analyzed, and Concurrence Point 3, Alternatives to be Carried Forward. The U.S. EPA and USFWS–Rock Island Field Office were unable to attend but concurred on both points. General comments from the meeting are summarized as follows:

- Agencies appreciated that right-of-way acquisition was being minimized, with improvements focused along the existing Interstate instead of in new corridors.
- Although certain resources could not be avoided because of expansion within or adjacent to the Interstate, the agencies requested that impacts on wetlands and other resources be minimized as the design process continues.

[1] The Nebraska Game and Parks Commission and the Regulatory Branch of the USACE Omaha District provided concurrence only for those segments for which they had jurisdiction. The Nebraska Game and Parks Commission only has jurisdiction for Segment 1, and the Regulatory Branch of the USACE Omaha District has jurisdiction for Segments 1 and 2.

- The agencies agreed to postpone the decision on whether Concurrence Point 4 will be conducted by mailed packages and a meeting, or by mailed packages only.

USACE provided specific comments that are addressed in this document and discussed briefly in Table 5-1.

TABLE 5-1
Summary of USACE Comments at 2006 Concurrence Points 2 and 3 Meeting

Comment	Resolution
The USACE requested that the project avoid wetland areas as feasible, then minimize unavoidable impacts and address specific mitigation in the Section 404 permitting process.	The EA addresses avoidance, minimization, and mitigation. Specific mitigation will be addressed in the Section 404 Permit.
Floodplain development permits will be needed, and 100-year levees modified by the Build Alternative will need to be reconstructed to maintain the former level of flood protection.	Coordination will occur with the local floodplain agency to permit construction within a floodplain. Coordination with USACE is being conducted concerning the design of the roadway serving as a levee.

5.1.2.2 Concurrence Points 2 and 3, Tier 2 (2010)

The introduction of a railroad consolidation component to the roadway improvements in Segment 3 changed the scope of the project and alternatives the agencies considered and concurred on at the Concurrence Points 2 and 3 meeting held on April 26, 2006. As a result, a second meeting was required to gain agency concurrence on the current Alternatives to be Analyzed and Alternatives to be Carried Forward.

The second meeting was held on April 28, 2010 at Iowa DOT's office in Ames. A coordination packet for the April meeting was sent to the agencies on April 6, 2010. At the meeting, all participants (USACE–Rock Island District, Iowa DNR, and USEPA) concurred on Concurrence Point 2, Alternatives to be Analyzed, and Concurrence Point 3, Alternatives to be Carried Forward. The USFWS–Rock Island Field Office was unable to attend but concurred on both points on September 20, 2010. General comments from the meeting are summarized as follows:

- Was the UPRR bridge and line over the Missouri River included in consolidation considerations? *UPRR participated in early consolidation discussions, but UPRR has no lines in the Segment 3 project area.*
- Will bridges across Mosquito Creek have any piers in the channel? *Iowa DOT indicated that the channel is narrow enough that no piers would be located within the channel.*
- Clarification was sought concerning potential impacts to eastern massasauga rattlesnake habitat. *Marginal habitat was identified in wetlands south of the BNSF tracks east of Mosquito Creek and along the CBEC railroad in the southeast part of the project. The massasauga rattlesnake habitat along the CBEC corridor would not be affected because the property would be turned over to the City of Council Bluffs in its current condition.*
- Would wetland mitigation occur within the project area? *Iowa DOT indicated that it planned to use a wetland mitigation bank instead of onsite mitigation.*

5.2 Public Involvement

The Tier 1 public involvement program is described in Section 5 of the Draft EIS on the CD at the back of this document. The key components of the Tier 2 public involvement program are outlined in the following sections.

5.2.1 Public Meetings

Iowa DOT conducted three public information meetings and one public hearing addressing the Tier 2 Segment 3 Project. All were held at the Mid-America Center in Council Bluffs, except for the May 28, 2009, hearing, which was held at the Council Bluffs Community Hall.

5.2.1.1 October 11, 2005 Meeting

The first public meeting was held on October 11, 2005, to announce the start of the Tier 2 process and present preliminary design concepts under consideration for Segments 1 through 5. The concepts presented were refinements of concepts considered during Tier 1 to determine the area of potential impact and were the same as the range of alternatives discussed in Section 2.3.2 of this EA. The public had the opportunity to observe and comment on the proposed roadway improvements. General comments from the October 11, 2005, meeting and comments specific to Segment 3, are summarized as follows:

General Comments.

- All elevated road structures should have aesthetic treatments. Aesthetically pleasing landscaping should be employed along the right-of-way.
- There was concern about increased noise levels as a result of increased traffic and the roadway being closer to residences.
- There was objection to the dual-divided concept because of the limitations for vehicles to exit the Interstate.
- There was some concern for potential impacts during construction to property foundations close to the Interstate.
- Protective barriers (such as guardrails) should be placed to ensure that run-off road accidents do not damage residential or other properties outside the right-of-way.
- If the dual-divided concept is implemented, proper signage will be useful.

Specific Comments and Responses.

- There were questions concerning potential improvements to the pedestrian/bicycle trail near the I-80 interchange at Madison Avenue, and if the trail is to be improved to continue along Madison Avenue under the I-80 overpass. *Iowa DOT indicated that Valley View Trail would remain essentially in its current configuration on either side of and beneath the I-80 bridges.*
- There was positive response showing support for Build Alternative B, where this configuration will allow U.S. 275/IA 92 to merge into the express lane.
- The public would like to be notified when relocations are determined. *Iowa DOT plans to meet individually with landowners when relocations are known.*

5.2.1.2 June 24, 2008 Meeting

During a public meeting held June 24, 2008 that focused on Segment 2, Iowa DOT indicated that Segment 3 was being evaluated for consideration of railroad corridor consolidation to improve transportation efficiency in Council Bluffs. No displays or handouts of Segment 3 information were provided at the meeting, and no comments pertaining to Segment 3 were noted at this Segment 2 meeting.

5.2.1.3 May 28, 2009 Hearing

Iowa DOT conducted a design public hearing on May 28, 2009 to seek public input on the proposed reconstruction of the I-29/U.S. 275/Iowa Highway 92 (IA 92) interchange, the associated railroad relocations, and possible land acquisition needs for the improvements. All comments received at the design hearing were specific in nature.

Specific Comments and Responses.

- A property owner was concerned about the possibility of their entire farm being acquired if the railroad consolidation moves ahead. *Iowa DOT indicated that no decision had been made yet on whether the railroad consolidation would be part of the CBIS improvements*.
- A property owner supported the possibility of being acquired by the railroad consolidation improvements.
- A farmer expressed concerns about the land-locked portion of his property and wants the DOT to provide access. It was noted that the parcel was landlocked when I-29 was constructed. *Iowa DOT stated that this issue would be researched by the Office of Right of Way*.
- The Superintendent of the Lewis Central Community School District would like to see the railroad move west away from the school. Currently the railroad separates the school's transportation department, where the buses are parked, from the school. Increased train traffic would create delays for the buses in accessing the school. *Iowa DOT acknowledged the school district's comment, but noted that no decision had been made yet on whether the railroad consolidation would be part of the CBIS improvements*.

5.2.1.4 June 8, 2010 Meeting

On June 8, 2010 Iowa DOT held a meeting to update the public on the latest preliminary design in Segment 3, including the railroad consolidation improvements. Information was also provided about the key features of the Phase 1 (interim) and Phase 2 (ultimate) construction planned for the project. The ultimate improvements are being constructed in phases to increase capacity and improve traffic flow as funding allows. Depending on funding, the second phase of construction may not begin for 5 years or more after the first phase is complete. The construction phasing information provided at the meeting is described in Section 2.8. A brief update was also provided on construction projects in Segments 1 and 2 of the overall CBIS Improvements Project.

General Comments.

- Attendees expressed interest in the start date for Segment 3 construction.
- More information was requested concerning Iowa DOT's real estate process.
- Attendees identified a concern about increasing noise levels associated with traffic.

Specific Comments and Responses.

- One attendee requested a noise study in the area surrounding their residence. *Iowa DOT is conducting a noise study to address potential changes in the traffic noise environment, including consideration of noise abatement measures.*

- Is it prudent to make improvements to a residence that may be displaced? *Iowa DOT noted that the property would be appraised before an offer is made to the owners. The appraisal and an evaluation of the price comparable properties are selling for in the area would be considered in Iowa DOT's purchase price. Whether one receives the value of the improvements in the purchase price could depend on the value of the improvement and whether it influences the range of comparable sales that Iowa DOT uses.*

- Will there be adequate time in DOT's real estate process to relocate an affected business? *Iowa DOT explained that they are aware that moving a business will be time consuming and complicated. Iowa DOT's Right of Way Office is interested in working with the property owner to make the process easier. Although there are timeframes within which Iowa DOT would like to relocate a property owner, they realize that each property owner presents different circumstances that can affect the amount of time it takes to complete the relocation.*

- Can DOT acquire a property that is currently very difficult to access? *Iowa DOT agreed to consider the request without committing to acquire the property. They will coordinate with the property owner as design continues.*

5.2.2 Correspondence

Throughout the course of the project, correspondence was received from the public through such means as public information meetings, telephone calls, letters, and e-mail. All public correspondence was recorded, and a response was sent to the specific public entity or individual if one was requested.

5.2.3 Project Newsletters

A series of newsletters addressing the CBIS Improvements Project during Tier 1, which included information on Segments 1 through 5, was published and distributed to all interested parties on the Project mailing list. Newsletter #1 was sent in January 2003 before the first Tier 1 public meeting, Newsletter #2 was sent in July 2003 before the second Tier 1 public meeting, and Newsletter #3 was sent in January 2005 in advance of the public hearing on the Tier 1 Draft EIS. Newsletter #4 was sent in September 2005 prior to the public meeting announcing Tier 2, which was held on October 11, 2005. Newsletter #5 was a notice for the public hearing on the Segment 1 EA and it also provided information on the preferred concept in Segment 3. Newsletters were also sent to interested parties before the June 2008 (Newsletter #7) and June 2010 (Newsletter #9) public meetings. Newsletters #6 (August 2007) and #8 (January 2009) only presented information about Segment 2 issues. Iowa DOT prepared a project statement prior to the May 2009 design public hearing. The project mailing list includes more than 2,000 businesses, city and county officials, public entities, and residents.

5.2.4 Project Web Site

A Web site (http://www.iowadot.gov/cbinterstate/) has been developed for the public to obtain information about the CBIS Improvements Project, including information on the

Segment 3 Project. The site provides information on the overall project, the public involvement process, environmental studies and documents to support the project, the design and property acquisition processes, and Iowa DOT contact information.

5.2.5 Future Public Involvement

A public hearing on the EA for the Segment 3 Project is anticipated in spring 2011.

5.3 Tribal Coordination

Under the guidance of Section 106 of the National Historic Preservation Act of 1966 (16 USC 470f), states are required to coordinate with Indian tribes if a project could affect lands with cultural or religious significance. Each state has its own process of notification. Iowa employs a four-step process, beginning with early coordination. As part of the Iowa DOT early coordination process for Tier 1, project information was sent in January 2003 to tribal contacts of the Iowa, Omaha, Otoe-Missouria, Sac and Fox, and Winnebago tribes with potential interest in the project area. Table 5-2 summarizes the responses received.

TABLE 5-2
Tribal Notification during Tier 1

Tribe	Response Summary	Date of Response
Iowa Tribe of Kansas-Nebraska	No response.	—
Iowa Tribe of Oklahoma	Would like to review any archaeological studies.	January 27, 2003
Omaha Tribe	No immediate concerns of discovering evidence of the Omaha Tribe's occupation. Contact if evidence is discovered.	January 30, 2003
Otoe-Missouria Tribe	Would like to review any archaeological studies.	May 13, 2003
Sac and Fox Tribe of Mississippi	Contact if human remains or objects are discovered.	February 6, 2003
Sac and Fox Tribe of Missouri	No response.	—
Sac and Fox Tribe of Oklahoma	No response.	—
Winnebago Tribe	The tribe did not inhabit the area.	January 24, 2003

5.4 Railroad Consolidation Coordination

Ongoing coordination has occurred with the railroads and rail-served industries potentially affected by the proposed railroad consolidation associated with the construction of CBIS Segment 3. Seven conference calls and ten meetings have occurred from October 2009 through November 2010 with Iowa DOT and the railroads, potentially affected industries, businesses, FHWA, or the City of Council Bluffs. In addition to these formal calls and meetings, numerous informal calls and emails have been conducted with the railroads, rail-

served industries and the City of Council Bluffs to facilitate the proposed railroad consolidation.

A memorandum of understanding between the Iowa DOT and BNSF was finalized on August 6, 2009. Iowa DOT is working on establishing definitive agreements with three railroads (BNSF, CBEC, and IAIS) and SIRE.

Section 6

Conclusion and Recommendation

SECTION 6

Conclusion and Recommendation

This EA documents the absence of significant impacts associated with the implementation of Revised Build Alternative B, described in Section 2.7, and evaluated for impacts in Section 3, Affected Environment and Environmental Consequences. Table 6-1 lists the potential impacts of Revised Build Alternative B. Although the impacts of the No-Build Alternative are expected to be less than those of Revised Build Alternative B, congestion would continue to increase and out-of-distance travel would increase because of drivers choosing alternate routes to avoid highly congested parts of the Interstate. Furthermore, if the Interstate improvements are not constructed, additional projects may be needed elsewhere in the Council Bluffs metropolitan area to accommodate the projected traffic increases on local roads and major arterials. Consequently, future projects could still result in some undetermined level of impacts on resources within and near the Segment 3 study area. In addition, the No-Build Alternative would not improve the efficiency of the railroad network. Delays at at-grade intersections would continue, with more vehicles being delayed by trains as vehicular traffic increases in the future.

Revised Build Alternative B will not have significant floodplain, wetland, noise, threatened and endangered species, water resources, regulated materials, cultural resources, land use, Section 4(f) resources, or residential, commercial and institutional displacements impacts. Unless impacts of a significant nature are identified as a result of agency and public review of the EA or at the public hearing on this EA, then a Finding of No Significant Impact will be prepared for the Segment 3 project as a basis for federal-aid corridor location approval. This determination is based on the appropriate implementation of applicable federal, state, and local requirements for erosion, water quality, waters of the U.S., floodplains, Section 4(f) properties, and regulated materials sites. The Finding of No Significant Impact will note specific activities to avoid, minimize, or mitigate impacts and will address any comments received on the EA.

TABLE 6-1
Impact Summary

Environmental Issue	Unit of Measure	Segment 3 Preferred Alternative
Project Length	miles	8
Construction Cost	million $	$780 to $850 [a]
Right-of-way Required		
Total area required	acres	849
New area converted to right-of-way	acres	439
Existing right-of-way used	acres	410
Land Conversion		
Residential property converted to right-of-way	acres	32
Agricultural property converted to right-of-way	acres	205
Commercial property converted to right-of-way	acres	21
Industrial property converted to right-of-way	acres	181
Real Estate		
Residences relocated	number	66
Businesses relocated	number	12
Environmental Issues		
Floodplain crossings	number	1
Stream/waterway crossings	number	8
State threatened and endangered species	yes/no[b]	No
Historic and archaeological properties[c]	number	0
Design year noise receivers affected	number	18
Moderate/high risk regulated material sites affected	number	7
Wetlands affected	acres	18
Floodplains affected	acres	437

Note: The impact summary table presents only impact comparisons that have been quantified. Preliminary planning-level cost estimate (2010 dollars) are presented for the Segment 2 and 3 interim Project. The cost range includes construction, structures, right-of-way, real estate, utility relocations, administrative/engineering and contingency cost. Acquisition of wetland mitigation sites and other environmental costs are not included in the cost estimate. Section 2.8 contains more information about the Interim Project.

[a] Estimated costs are in year of expenditure dollars.
[b] Applies to viable habitat and locating the presence of the species.
[c] Sites on or eligible to the National Register of Historic Places that would be adversely affected.

Section 7

References

SECTION 7

References

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Appendix A
Agency Correspondence

I29 OVER MOSQUITO CK

Iowa Department of Transportation

800 Lincoln Way, Ames, IA 50010 515-239-1206
FAX - 515-239-1978

October 27, 2005

William Cappuccio
Flood Plain Permitting
Iowa Department of Natural Resources
Wallace State Office Building
502 E. 9th St.
Des Moines, IA 50319-0034

Re: Council Bluffs Interstate System Reconstruction
Hydraulic Modeling Requirements for Flood Plain Permits

Dear Mr. Cappuccio:

The Iowa Department of Transportation is proposing reconstruction of the Council Bluffs Interstate System. This proposed work will include replacing the I-29/I-80 bridges over Indian Creek, the I-29 bridges over Mosquito Creek, and the I-80 bridges over Mosquito Creek. These three bridge sites are located within the City of Council Bluffs Flood Insurance Study (FIS).

The 240' long I-29/I-80 bridge over Indian Creek will be replaced with a 250' long PPCB bridge. The 100 year flood is contained within the levees and the proposed bridge will provide a minimum of 3 foot of freeboard. The proposed bridge will not reduce the waterway opening and the FIS shows minimal backwater created by the existing structure. The proposed bridge should not increase flood stages of Indian Creek nor will the project violate the terms of Council Bluffs Flood Plain Management Ordinance (FPMO). Based on the reasons listed above, we request the Iowa DNR concur with our assessment that a detailed hydraulic model will not be required for review of a permit application for a proposed 250' long bridge at this location.

The I-29 bridge over Mosquito Creek will be modeled using either HEC-2 or HEC-RAS since the existing FIS shows approximately 0.8' of backwater and 2.8 feet of freeboard. The maps show that flows exceed the levee top near the upstream US 275/IA 92 bridge.

The 602' long I-80 bridge over Mosquito Creek will be replaced with a 710' long steel bridge. The proposed bridge will not reduce the existing waterway opening and will provide two less piers than the existing structure. The FIS shows minimal backwater and approximately 21 feet of freeboard. The proposed bridge should not increase flood stages of Mosquito Creek as shown in the city's FIS. Based on the reasons listed above,

we request the Iowa DNR to concur with our assessment that a detailed hydraulic model will not be required for review of a permit application for a 710' long bridge at this site.

For each site, we have enclosed the FIS maps and profiles as well as a comparison of existing and proposed conditions for your review. If you need any additional information or have any questions, please feel free to contact me at (515) 239-1487 or Patricia Schwarz at 233-7948.

Thank you for your consideration.

Sincerely,

David R. Claman, P.E.
Preliminary Bridge Engineer
Office of Bridges and Structures

Enclosures

cc: Donna Matulac, Location and Environment

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

May 13, 2006

Ref. No: IMN-29-3(62)54-13-78
Pottawattamie
Primary

Mr. Douglas W. Jones
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C: 020378055

Dear Doug:

RE: Council Bluffs Interstate System Improvements (CBIS) Project
City of Council Bluffs, Iowa
Phase I Archaeological Investigation- Segments 2 and 3

Enclosed for your review is the Phase I Archaeological Investigation for the above-mentioned federal funded project. This project proposes a series of interstate improvements along the I-80, along a 22-mile corridor involving Interstate-29 and Interstate-80 in Council Bluffs, Pottawattamie County, Iowa. The Phase I Archaeological Survey investigated Segments 2 and 3 of this proposed project.

The area of potential impact encompasses a project corridor that has a variable length of 3 7 miles and an approximate width of 600 ft. (This project corridor is divided into two segments) A total area of 774 acres was surveyed during this archaeological investigation.

This investigation was conducted using an extensive archival / records search, along with a series of pedestrian surveys of the project area. In addition to these investigation techniques, subsurface testing was also conducted within the proposed project areas. During this investigation, four previously recorded sites were re-examined and identified. Fourteen previously unrecorded archaeological sites were also discovered during the course of this survey, each were examined and recorded.

Of the four previously recorded archaeological sites, Sites 13PW121, 13PW122, and 13PW123 were reexamined and their original site boundaries expanded. These sites represent historic scatters, refuse dumps, and a former historic farmstead (13PW122). Though the site boundaries for each of these sites were expanded, this investigation concluded that all three sites original determination of not being eligible for the National Register was warranted. No further work was recommended for them

The previously recorded site, 13PW161, represents the former Council Bluffs Airport. The current investigation determined that the area of former airport that maybe impacted by the proposed project is not eligible for the National Register. However, due to restrictions placed upon the field investigation by the property's landowners, the western portion of site 13PW161 was not examined at the Phase I level. Due to this, it is recommended that western portion of Site 13PW161 be examined at the Phase I level if that portion is impacted by this project.

As mentioned, this Phase I survey identified fourteen previously unrecorded archaeological sites. These newly recorded sites included three historic scatters (13PW182, 13PW183, and 13PW185), four historic farm / residence sites (13PW183, 13PW186, 13PW191, and 13PW194), one historic agricultural outbuilding site and refuse dump (13PW192) one bridge and refuse scatter (13PW187), two railway grades (13PW188 and 13PW189) one secondary road maintenance building site (13PW190), one industrial pork-packing site (13PW195). In addition to these historic archaeological sites, one prehistoric open habitation site (13PW193) was identified outside of the current project corridor.

All thirteen of the newly identified historic sites were determined not eligible for the National Register. The one prehistoric site discovered during this survey, 13PW193, was recommended for Phase II testing if impacted by this project. The present design plans will avoid impacting this prehistoric archaeological site.

It should be noted that during this investigation, one isolated prehistoric artifact was found during the investigation of historic site, 13PW191. This find, a single chert-flake, appears to be out of context and does not influence the determination that Site 13PW191 is not eligible for the National Register and no further work is recommended for it.

Based on the findings of this Phase I investigation, *along with the understanding that the western portion of historic archaeological site 13PW161 will not be impacted by this project and that prehistoric site 13PW193 is outside of the project corridor and will not be impacted by the project, as well,* the determination for Segments 2 and 3 of this project is **No Historic Properties Affected.**

If you concur with this determination, please sign the concurrence line below and return this letter. If you have any questions regarding this project or this survey, please do not hesitate to contact me.

Sincerely,

Matthew J.F. Donovan

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
Kris Riesenberg- Location and Environment
Leah D Rogers- Principal Investigator- Tallgrass

Matthew J.F. Donovan
Office of Location and Environment
Matt.Donovan@dot.iowa.gov

Concur: Douglas W. Jones 6/16/2006
SHPO Archaeologist Date:

Comments

Concurred by expiration of the 30 day comment period

Iowa Department of Transportation

March 13, 2006

Stephen Chick
USDA
100 Centennial Mall North
Federal Building Room 152
Lincoln, NE 68508-3866

Project as described is cleared of Farmland Protection Policy Act (FPPA) concerns

State Conservationist — Date 3/17/06

Subject: Council Bluffs Interstate System Improvements, Segments 1, 2, and 3 Tier 2
National Environmental Policy Act (NEPA) Documents
Douglas County, Nebraska and Pottawattamie County, Iowa
Iowa DOT Project No. IMN-29-3(62)54—13-78

Dear Mr. Chick,

The Iowa Department of Transportation (Iowa DOT), in coordination with the Federal Highway Administration (FHWA), Nebraska Department of Roads (NDOR), and the Cities of Council Bluffs, Iowa, and Omaha, Nebraska, is initiating the Tier 2 NEPA documents for Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements.

The Iowa DOT has contracted with HDR Engineering and CH2M HILL to prepare the Tier 2 NEPA documents for the aforementioned segments. A Tier 1 Final Environmental Impact Statement (EIS) and Record of Decision were completed in 2005 with a system-wide scope covering a portion of the interstate system in Council Bluffs and Omaha. The Tier 1 EIS identified five segments of the interstate system for detailed evaluation in Tier 2. Based on prioritization and funding availability, Segments 1, 2, and 3 were selected for initial detailed study. FHWA and Iowa DOT have determined that the following NEPA evaluations will be performed for the individual segments:

An Environmental Assessment (EA) will be prepared for Segment 1
A Categorical Exclusion (CE) will be prepared for Segment 2
An EA will be prepared for Segment 3

As part of our early coordination efforts for the Tier 2 NEPA documents, we are alerting you to the initiation of this study and enclosing an early coordination package for your agency's input and comments in your area of expertise and/or jurisdiction by law. The input and comments will help prioritize the specific resources studies on the three segments. The attached information provides background material about the tiered process, the Tier 2 study area and the potential impacts associated with the project's Selected Alternative. Please submit any comments your agency has on the Segment 1, 2, and 3 projects to me.

Thank you for your participation in this project's Tier 1 activities. We look forward to continued coordination during Tier 2. Please feel free to call me at (515) 233-7977 if you have any questions or concerns about this project.

Sincerely,

Kris Riesenberg
IOWA DEPARTMENT OF TRANSPORTATION

cc: Donna Matulac – Iowa DOT - Office of Location & Environment,
John Carns – Iowa DOT – District 4
Len Sand – NDOR (w/enclosure)
Michael LaPietra – FHWA - (w/enclosure)

U.S. Department of Housing and Urban Development
Iowa State Office
Federal Building
210 Walnut Street, Room 239
Des Moines, Iowa 50309-2155

March 21, 2006

Iowa Department of Transportation
Kris Riesenberg
Office of Location/Environment
800 Lincoln Way
Ames, IA 50010

Subject: Council Bluffs Interstate System Improvements, Segments 1, 2, and 3 Tier 2
National Environmental Policy Act (NEPA) Documents
Douglas County, Nebraska and Pottawattamie County, Iowa
Iowa DOT Project No. IMN-29-3(62)54-13-78

Dear Mr. Riesenberg:

We have received your inquiry to the subject location for Environmental Assessment Documentation and have reviewed such.

We do not contemplate any detrimental effects on any of our projects in the area under review.

Sincerely,

James P. Ryan, Director
Des Moines Multifamily
Program Center

K. Riesenberg

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1225
Fax: 515-239-1726

July 28, 2006

Ref. Pottawattamie County
IM-029-3(62)54--13-78
PIN: 04-78-029-010

Richard C. Nelson
U.S. Fish and Wildlife Service
Rock Island Field Office
4469 48th Avenue Court
Rock Island, Illinois 61201

Dear Mr. Nelson:

The Iowa Department of Transportation (DOT) and Nebraska Department of Roads are proposing to reconstruct and add capacity to the I-29/I-80/I-480 Interstate Systems in Council Bluffs, Pottawattamie County, Iowa and Omaha, Douglas County, Nebraska.

A Tier 1 Environmental Impact Statement and Record of Decision were approved by FHWA for this project on October 26, 2005. The project has been divided into five segments for completion of Tier 2 level NEPA documentation.

Iowa DOT requests informal consultation with the Service regarding the Tier 2 Segment 1, 2, and 3 projects, in accordance with Section 7(a)(2) of the Endangered Species Act, 50 CFR §402.13, and the delegation authority provided by FHWA.

On April 15, 2003, the Service provided information concerning species, listed or proposed to be listed, in the project area. A survey of the project area was conducted on July 7 and 8, 2005 to document the presence of any protected species and critical or suitable habitat in the project area. No listed species or critical habitat were identified during the survey. Please find enclosed the *Threatened and Endangered Survey Technical Memorandum* that documents the results of the literature reviews and field surveys.

Based on this information, the Iowa DOT has determined, under the delegation authority provided by FHWA, that the proposed project is not likely to adversely affect federally listed species or result in the destruction or adverse modification of federally designated critical habitat. *We request that the Service concur with this determination.*

We have enclosed supporting information to assist in your review of this project, including forms documenting "Not Likely to Adversely Affect" for seven species.

This project is a federal-aid project. If you have questions or need additional information, please contact me or Scott Marler at 515/ 239-1510.

Sincerely,

James P. Rost
Director, Office of Location and Environment

Enc.

cc: Daryl Howell, Iowa Department of Natural Resources

Christine Schwake, Iowa Department of Natural Resources

Neal Johnson, U.S. Army Corps of Engineers, Rock Island District

Steve Anschutz, U.S. Fish and Wildlife Service, Grand Island Field Office, 203 West 2nd Street, Grand Island, Nebraska 68801

Carey Grell, Nebraska Game and Parks Commission, 2200 N 33rd Street, PO Box 30370, Lincoln Nebraska, 68503

Len Sand, Nebraska Department of Roads, 1500 Highway 2, PO Box 94759, Lincoln, Nebraska, 68509

R. Ridnour, Location & Environment
K. Riesenberg, Location & Environment
S. Marler, Location & Environment
M. Solberg, Location & Environment (file)
J. Selmer, District 4, Iowa DOT
M. LaPietra, Federal Highway Administration

Determination of Effect for Threatened & Endangered Species

Project Name:		Highway No.:
Council Bluffs Interstate System Improvements Project Segments 1, 2, 3		I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78		Station No.:
County: Douglas (NE), Pottawattamie (IA)	Letting Date:	PLSS/UTM:

Project Description:

Improve the existing components of several segments of the Council Bluffs Interstate System (CBIS) within Omaha, NE and Council Bluffs, IA. A detailed project description is provided in a T&E species survey (report attached).

Are there documented occurrences of T&E species within 1 mile of the project? ☒ Yes ☐ No

If yes, list species:

There are documented occurrences of pallid sturgeon and lake sturgeon within 1 mile of the project area for Segments 1 and 2.

Are there documented occurrences of T&E species within the limits of construction? ☐ Yes ☒ No

If yes, list species:

The documented occurrences are outside the limits of construction.

Is there likely to be habitat for T&E species within the project's limits of construction? ☒ Yes ☐ No

If yes, list species:

A T&E species survey (report attached) was conducted within the Tier 1 area of potential impact for the 11 species identified as potential concerns by USFWS, Iowa DNR, and NGPC: bald eagle, piping plover, interior least tern, Indiana bat, pallid sturgeon, western prairie fringed orchid, prairie bush clover, lake sturgeon, sturgeon chub, eastern massasauga rattlesnake, and American ginseng; the last four species are only State-listed as threatened or endangered species. The report documented areas where potential habitat exists for these species, although none of the species were identified during the survey.

Describe current geographic setting *(native habitats, adjacent land use, etc.)* and potential project impacts:

The attached report describes the current geographic setting, including a description of the potential habitat areas for T&E species. Ten areas, of which only four were considered to have potential T&E habitat, within the area of potential impact were evaluated. No designated critical habitat for T&E species exists within the area of potential impact. Consequently, the proposed projects for Segments 1, 2, and 3 would not result in the destruction or adverse modification of federally designated critical habitat.

No T&E species were detected and no potential habitat was detected for prairie bush clover, American ginseng, piping plover, and interior least tern. Consequently, the CBIS Improvements Project for Segments 1, 2, and 3 would have "No Effect" on the aforementioned species. For the other seven species with potential habitat within the area of potential impact, the projects for Segments 1, 2, and 3 "May Affect – Not Likely to Adversely Affect" the species; the following pages provide a determination of effect for each of the seven species.

Will the project likely require borrow? ☒ Yes ☐ No

DETERMINATION OF EFFECT - ACTION

☐ No Effect ☐ No Effect *(by following recommendations)* ☐ Needs Further Study
☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Further Study – *Consisting of the Following*	Iowa DOT Recommendations
Iowa DOT does not feel that any further study is warranted.	Iowa DOT recommends that the projects proceed as designed while implementing applicable avoidance and minimization criteria to assure that construction does not adversely affect threatened and endangered species.

References:

☒ Natural Heritage Database ☐ T&E Species Range Maps ☒ Aerial Photos ☐ Soils of Concern Data
☒ Other: T&E Species Survey (attached)

Prepared By: *Date:*

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name:		Highway No.:
Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3		I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78		Station No.:
County: Douglas (NE), Pottawattamie (IA)	Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☒ Federal ☒ State	Species Trait or Characteristic:
Western Prairie Fringed Orchid	wet meadow / wet prairie habitat

Description of Project Impacts:
Destruction of potential plant occurrence and marginal habitat due to roadway corridor widening

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☐ Harass

Although no western prairie fringed orchid individuals were identified during the July 2005 intensive pedestrian survey, marginal western prairie fringed orchid habitat is present in the excavated, emergent wetland within Area 1C near the southern fringe of the Segment 1 and 2 area of potential impact; therefore, the potential occurrence of this species can not be discounted. Based on the preliminary impact area (shown in Segment 1, 2, and 3 Concurrence Point 2 and 3 package), cut and fill activities associated with the roadway widening in the wetland habitat portion of Area 1C would occur during the Segment 2 Project, but not during the Segment 1 Project. Although not shown on the survey report figures, the emergent wetland extends approximately 250 feet south of the area of potential impact. The habitat present is marginal and the likelihood of individuals to occur in the area is minimal. Considering the marginal habitat that could be affected and the minimal likelihood of individuals to occur in the area, no take is anticipated for the Segment 2 Project and less than half of the wetland habitat would be affected. Consequently, insignificant direct effects are anticipated from the Segment 2 Project. No take or direct impacts would occur for the Segment 1 Project because the excavated, emergent wetland portion of Area 1C is outside the preliminary impact area. No potential habitat for western prairie fringed orchid was found in the area of potential impact for Segment 3, so no take or direct impacts are anticipated for the Segment 3 Project.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on western prairie fringed orchids or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☐ Harass

Although it is possible that other projects unrelated to the CBIS Segment 1, 2, and 3 improvements could affect areas that may contain western prairie fringed orchid habitat, it is unlikely that Area 1C would be affected by another project. The WHTC manages the land surrounding and including the emergent wetland and plans to keep this area in a natural state. Minimal potential habitat for western prairie fringed orchid exists in the Omaha/Council Bluffs metropolitan area based on the development that has occurred. Consequently, disturbance of potential habitat from the Segment 2 Project would cause insignificant cumulative effects. Segments 1 and 3 would have no cumulative effect because the projects would not affect the species.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on western prairie fringed orchid and its habitat, the determination of effect for the Segment 2 Project is “May affect – Not likely to adversely affect”, and for the Segment 1 and 3 projects is “No effect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name:	Highway No.:
Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3	I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78	Station No.:
County: Douglas (NE), Pottawattamie (IA) / Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☒ Federal ☒ State	Species Trait or Characteristic:
Bald Eagle	Loafing and hunting habitat within the area of potential impact.

Description of Project Impacts:
Clearing of mature eastern cottonwood trees in the riparian community adjacent to the Missouri River.

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

Direct effects would result from the clearing of mature eastern cottonwood (*Populus deltoides*) trees in the riparian communities in Nebraska (Area 1A) and Iowa (Area 1C) adjacent to the Missouri River (Area 1B). Areas 1A, 1B, and 1C would be affected during construction of Segment 1, and Area 1C would also be affected during construction of Segment 2. There was no suitable habitat found in Segment 3. Areas 1A and 1C serve as potential loafing habitat for bald eagle, but the loss would be insignificant because hundreds of acres of habitat exist along the Missouri River south of the I-80 bridge. Additionally, direct effects may stem from fish avoiding the area during construction because bald eagles potentially use the Missouri River corridor (Area 1B) as hunting habitat. However, bald eagles are also likely to avoid the area while construction is occurring due to increased noise levels and human activity, so the impact of a temporary change in fishery resources is expected to be minimal. A slight increase in traffic noise (1 to 2 A-weighted decibels) after construction is considered a direct effect, but would occur over several years. Based on studies of noise disruptions on eagles, this increase would be barely noticeable and insignificant. Although harassment might occur from the Segment 1 and 2 projects, the impact would be discountable because of the presence of nearby suitable loafing and hunting habitat. Clearing and grubbing would occur from October to January to accommodate the tree removal period recommended to avoid the nesting period of bald eagles and the time frame for nesting migratory birds.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on bald eagle or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

Projects unrelated to the CBIS Segment 1, 2, and 3 improvements could affect potential bald eagle habitat. Federally-funded bridge projects in the Omaha/Council Bluffs metropolitan area could affect riparian habitat but have undergone or are undergoing separate Section 7 consultation. Projects such as the unnamed riverfront housing development in Council Bluffs and the Riverfront Place housing development in Omaha could potentially cause the loss of forested riparian area adjacent to the Missouri River. However, significant adverse cumulative impacts on bald eagles because of the loss of trees and other potential habitat are not anticipated because of the large acreage of trees along the Missouri River south of the I-80 bridge. Area 1C is within WHTC, is being managed as a natural resource, and is not scheduled to be modified by the WHTC. Other considerations that minimize the potential for adverse impacts include project timing and coordination with resource agencies, as well as the minimization and mitigation measures to be implemented for each project. Consequently, disturbance of potential habitat would cause insignificant cumulative effects.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on bald eagle and its habitat, the determination of effect for the Segment 1 and 2 projects is “May affect – Not likely to adversely affect”. “No effect” is determined for the Segment 3 Project because of the lack of suitable habitat.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name: Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3		Highway No.: I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78		Station No.:
County: Douglas (NE), Pottawattamie (IA)	Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☒ Federal ☒ State	Species Trait or Characteristic:
Indiana Bat	Summer roosting

Description of Project Impacts:
Clearing of potential summer roosting trees in the riparian area adjacent to the Missouri River.

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

Direct effects would result from the clearing of mature eastern cottonwood (*Populus deltoides*) trees in the riparian communities in Nebraska (Area 1A) and Iowa (Area 1C) adjacent to the Missouri River. Areas 1A and 1C would be affected during construction of Segment 1, and Area 1C would also be affected during construction of Segment 2. There was no suitable habitat found in Segment 3. Loss of habitat may cause crowding in adjacent habitat, increasing the risk of predation and competition for food/shelter. Additionally, adults/young may avoid area during construction. A slight increase in traffic noise (1 to 2 A-weighted decibels) after construction is considered a direct effect but would be barely noticeable to Indiana bats that might use the area for summer habitat because the increase would occur over several years. The aforementioned impacts are considered insignificant because of the area of disturbance is negligible compared to hundreds of acres of habitat along the Missouri River south of the I-80 bridge. Although harassment might occur from the Segment 1 and 2 projects, the impact would be discountable because of the presence of nearby suitable roosting and hunting habitat. No take would occur, as tree clearing is planned to occur between October and January; this period is outside of the summer roosting months for Indiana bat in the Segment 1 and 2 project areas.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on Indiana bat or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

Projects unrelated to the CBIS Segment 1, 2, and 3 improvements could affect potential Indiana bat habitat. Federally-funded bridge projects in the Omaha/Council Bluffs metropolitan area could affect riparian habitat but have undergone or are undergoing separate Section 7 consultation. Projects such as the unnamed riverfront housing development in Council Bluffs and the Riverfront Place housing development in Omaha could potentially cause the loss of forested riparian area adjacent to the Missouri River. Indiana bats may experience cumulative effects through a loss of potential roosting habitat and from increased noise levels as a result of expanded development along the I-29/I-80 corridor. Area 1C is within WHTC land, is being managed as a natural resource, and is not scheduled to be modified by the WHTC. Significant adverse cumulative impacts on Indiana bats because of the loss of trees and other potential habitat are not anticipated because of the large acreages of trees along the Missouri River south of the I-80 bridge. Other considerations that minimize the potential for adverse impacts include project timing and coordination with resource agencies, as well as the minimization and mitigation measures to be implemented for each project. Consequently, disturbance of potential habitat would cause insignificant cumulative effects.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on Indiana bat and its habitat, the determination of effect for the Segment 1 and 2 projects is “May affect – Not likely to adversely affect” and the Segment 3 Project is “No effect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name:	Highway No.:
Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3	I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78	Station No.:
County: Douglas (NE), Pottawattamie (IA) / Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☐ Federal ☒ State	Species Trait or Characteristic:
Eastern Massasauga Rattlesnake	Moist, low swale habitat

Description of Project Impacts:
Filling of low areas during roadway expansion and improvement.

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

Although no eastern massasauga rattlesnake individuals were identified during the July 2005 intensive pedestrian survey, marginal potential habitat is present in Area 1C within emergent wetlands and Area 3C; therefore, the potential occurrence of this species can not be discounted. Past row-cropping of Area 3C and other disturbance reduces the likelihood of resident eastern massasauga. The portion of Area 1C that includes suitable habitat for eastern massasauga rattlesnake is outside the preliminary impact area for the Segment 1 Project. The wetland portion of Area 1C would be affected during the Segment 2 Project, and Area 3C would be affected during the Segment 3 Project. If an individual were present in the preliminary impact area, it would incur harassment because of cut and fill activities associated with the roadway widening in the vicinity of Areas 1C and 3C. However, suitable habitat is present adjacent to the area that would be impacted by the Segment 2 and 3 projects. Consequently, direct impacts would be insignificant.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on eastern massasauga rattlesnake or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

It is possible that some potential habitat would be impacted by other projects in the Omaha/Council Bluffs metropolitan area, but minimal potential habitat is likely present based on the development that has occurred. Area 1C is within WHTC land, is being managed as a natural resource, and is not scheduled to be modified by the WHTC. Area 3C includes land that is planned for a commercial development. Construction for the commercial project would likely involve destruction of most of the potential habitat prior to disturbance by the Segment 3 Project. Consequently, the existing marginal habitat would be reduced, essentially eliminating the potential for hosting the species by the time the Segment 3 Project would be constructed. Significant adverse cumulative impacts are not anticipated because the area affected by the Segment 2 Project is not planned to be modified by the WHTC and the area affected by the Segment 3 Project would not be suitable habitat after disturbance by construction of a commercial development.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on eastern massasauga rattlesnake and its habitat, the determination of effect for the Segment 2 and 3 projects is “May affect – Not likely to adversely affect” and for the Segment 1 Project is “No effect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name: Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3		Highway No.: I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78		Station No.:
County: Douglas (NE), Pottawattamie (IA)	Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☒ Federal ☒ State	Species Trait or Characteristic:
Pallid Sturgeon	Use of Missouri River for pre-spawning migration and foraging

Description of Project Impacts:
Placement of bridge piers in the Missouri River channel and removal of some riparian habitat adjacent to the channel.

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

The placement of two new piers, aligned with the piers supporting the existing I-80 Missouri River Bridge, would disturb pallid sturgeon migrating through or foraging in Area 1B; this area is not considered to be spawning habitat. Increased sediment runoff may also result from the construction of four piers on land within the Missouri River floodway, two each in Areas 1A and 1C of Segment 1. The new piers will be placed parallel to the existing piers to minimize impacts on Missouri River flow. Segment 2 and 3 do not include any portion of the Missouri River, but runoff from these project areas eventually discharges into the Missouri River. Construction noise and the disturbance of benthic sediment would occur and could affect pallid sturgeon. However, suitable habitat is present downstream and upstream of the area that would be impacted by the Segment 1 Project in the Missouri River and the Segment 2 and 3 projects which are in the Missouri River watershed. Erosion and runoff would be controlled in accordance with NDOR and Iowa DOT construction manual guidance. Direct impacts of the Segment 1, 2, and 3 projects would be insignificant. Although harassment might occur from the Segment 1 Project, the impact would be discountable because of the presence of nearby suitable migration and foraging habitat. Introduction of two more piers in the Missouri River would increase scour in this area and create pools potentially beneficial to pallid sturgeon.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on pallid sturgeon or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

Pallid sturgeon may experience cumulative effects related to other projects near and within the Missouri River in the Omaha/Council Bluffs metropolitan area. Federally-funded bridge projects in this area could affect pallid sturgeon habitat but have undergone or are undergoing separate Section 7 consultation. Projects such as the unnamed riverfront housing development in Council Bluffs and the Riverfront Place housing development in Omaha could potentially introduce additional runoff and erosion into the Missouri River. Several federally-funded projects are being implemented to help mitigate development impacts on pallid sturgeon. The Bellevue Bridge project is planned with a conservation easement to mitigate impacts on pallid sturgeon. The Council Bend restoration project will improve habitat for pallid sturgeon as well as other fish species. In response to concerns by the USFWS, the Missouri River recently had a planned release of a spring flow designed to flush the channel and serve as a spawning cue for pallid sturgeon. Significant adverse cumulative impacts on pallid sturgeon and its habitat are not anticipated in consideration of various projects, including mitigation projects, which affect the Missouri River.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on pallid sturgeon and its habitat, the determination of effect for the Segment 1, 2, and 3 projects is “May affect – Not likely to adversely affect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name: Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3		Highway No.: I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78		Station No.:
County: Douglas (NE), Pottawattamie (IA)	Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☐ Federal ☒ State	Species Trait or Characteristic:
Lake Sturgeon	Use of Missouri River for foraging, migration, and possible spawning

Description of Project Impacts:
Placement of bridge piers in the Missouri River channel and removal of some riparian habitat adjacent to the channel.

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

The placement of two new piers, aligned with the piers supporting the existing I-80 Missouri River Bridge, would disturb lake sturgeon migrating through or foraging in Area 1B; this area is also considered to include a portion of potential spawning habitat for lake sturgeon which occurs over long reaches of river. Increased sediment runoff may also result from the construction of four piers on land within the Missouri River floodway, two each in Areas 1A and 1C of Segment 1. The new piers will be placed parallel to the existing piers to minimize impacts on Missouri River flow. Segment 2 and 3 do not include any portion of the Missouri River, but runoff from these project areas eventually discharges into the Missouri River. Construction noise and the disturbance of benthic sediment would occur and could affect lake sturgeon. However, suitable habitat is present downstream and upstream of the area that would be impacted by the Segment 1 Project in the Missouri River and the Segment 2 and 3 projects which are in the Missouri River watershed. Erosion and runoff would be controlled in accordance with NDOR and Iowa DOT construction manual guidance. Direct impacts of the Segment 1, 2, and 3 projects would be insignificant. Although harassment might occur from the Segment 1 Project, the impact would be discountable because of the presence of nearby suitable foraging, migration, and spawning habitat. Introduction of two more piers in the Missouri River would increase scour in this area and create pools potentially beneficial to lake sturgeon.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on lake sturgeon or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

Lake sturgeon may experience cumulative effects related to other projects near and within the Missouri River in the Omaha/Council Bluffs metropolitan area. Projects such as the unnamed riverfront housing development in Council Bluffs and the Riverfront Place housing development in Omaha could potentially introduce additional runoff and erosion into the Missouri River. Several federally-funded projects are being implemented to help mitigate development impacts on pallid sturgeon, which utilizes habitat also preferred by lake sturgeon. The Bellevue Bridge project is planned with a conservation easement to mitigate impacts on pallid sturgeon. The Council Bend restoration project will improve habitat for pallid sturgeon as well as other fish species. In response to concerns by the USFWS, the Missouri River recently had a planned release of a spring flow designed to flush the channel and serve as a spawning cue for pallid sturgeon. Significant adverse cumulative impacts on lake sturgeon and its habitat are not anticipated in consideration of various projects, including mitigation projects, which affect the Missouri River.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on lake sturgeon and its habitat, the determination of effect for the Segment 1, 2, and 3 projects is “May affect – Not likely to adversely affect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Determination of Effect for Threatened & Endangered Species (Continued)

Project Name: Council Bluffs Interstate System Improvements Project Segments 1, 2, and 3		Highway No.: I-29/I-80
Project No.: Segment 1 IM-080-1(318)0—13-78; Segment 2 IM-029-3(67)52—13-78; Segment 3 IM-029-2(55)49—13-78		Station No.:
County: Douglas (NE), Pottawattamie (IA)	Letting Date:	PLSS/UTM:

SPECIES EVALUATION

Species of Concern: ☐ Federal ☒ State	Species Trait or Characteristic:
Sturgeon Chub	Use of Missouri River for foraging and migration

Description of Project Impacts:
Placement of bridge piers in the Missouri River channel and removal of some riparian habitat adjacent to the channel.

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

The placement of two new piers, aligned with the piers supporting the existing I-80 Missouri River Bridge, would disturb sturgeon chub migrating through or foraging in Area 1B; this area is not considered to be spawning habitat. Increased sediment runoff may also result from the construction of four piers on land within the Missouri River floodway, two each in Areas 1A and 1C of Segment 1. The new piers will be placed parallel to the existing piers to minimize impacts on Missouri River flow. Segment 2 and 3 do not include any portion of the Missouri River, but runoff from these project areas eventually discharges into the Missouri River. Construction noise and the disturbance of benthic sediment would occur and could affect sturgeon chub. However, suitable habitat is present downstream and upstream of the area that would be impacted by the Segment 1 Project in the Missouri River and the Segment 2 and 3 projects which are in the Missouri River watershed. Erosion and runoff would be controlled in accordance with NDOR and Iowa DOT construction manual guidance. Direct impacts of the Segment 1, 2, and 3 projects would be insignificant. Although harassment might occur from the Segment 1 Project, the impact would be discountable because of the presence of nearby suitable foraging and migration habitat. Introduction of two more piers in the Missouri River would increase scour in this area and create pools potentially beneficial to sturgeon chub.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 1, 2, and 3 improvements are not likely to induce growth. No new interchanges are planned along Segments 1, 2, or 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on sturgeon chub or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

Sturgeon chub may experience cumulative effects related to other projects near and within the Missouri River in the Omaha/Council Bluffs metropolitan area. Projects such as the unnamed riverfront housing development in Council Bluffs and the Riverfront Place housing development in Omaha could potentially introduce additional runoff and erosion into the Missouri River. Several federally-funded projects are being implemented to help mitigate development impacts on pallid sturgeon, which utilizes habitat also preferred by sturgeon chub. The Bellevue Bridge project is planned with a conservation easement to mitigate impacts on pallid sturgeon. The Council Bend restoration project will improve habitat for pallid sturgeon as well as other fish species. In response to concerns by the USFWS, the Missouri River recently had a planned release of a spring flow designed to flush the channel and serve as a spawning cue for pallid sturgeon. Significant adverse cumulative impacts on sturgeon chub and its habitat are not anticipated in consideration of various projects, including mitigation projects, which affect the Missouri River.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on sturgeon chub and its habitat, the determination of effect for the Segment 1, 2, and 3 projects is “May affect – Not likely to adversely affect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

AUG 1 8 2006

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010 515-239-1795
FAX 515-239-1726

August 16, 2006

Ref. No IMN-29-3(62)54--13-78
City of Council Bluffs
Pottawattamie County
Primary

Ralph Christian
Review and Compliance
Department of Cultural Affairs
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319

R&C# ***020378055***

Dear Ralph:

RE: Architectural Survey – Council Bluffs Interstate System Improvements, Segment 3

Enclosed for your review and file is the architectural survey for Segment 3 of 3 segments of the I-29 and I-80 improvements in the Council Bluffs/Omaha area. Segment 3 is within Council Bluffs as indicated in figure 1 in the Appendix of the report.

Within Segment 3, 106 properties were evaluated. Forty properties were 40 years or older while the rest were modern. No properties qualify for the National Register. The Interstate system in Council Bluffs was built in the late 60s and early 70s. According to the FHWA Section 4(f) and NHPA Section 106, the Interstate System is exempt from the National Register. The individual elements of the system do not qualify for the National Register on their own.

Based upon the submitted report, the Department has made a determination of No Historic Properties Effected. If you agree, please sign the concurrence line below. If you have any questions or need any further information, please do not hesitate to contact me.

Sincerely,

Judy McDonald
Office of Location & Environment
judy.mcdonald@dot.iowa.gov

JM
Enclosure
cc: John Selmar, District 4
Donna Matulac, OLE
DeeAnn Newell, OLE
Jan Nash, Tallgrass, Historians

Concur:

SHPO Date Sept 5, 2006

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office
4469 48th Avenue Court
Rock Island, Illinois 61201
Phone: (309) 793-5800 Fax: (309) 793-5804

IN REPLY REFER TO:
FWS/RIFO

August 30, 2006

Mr. James P. Rost
Attn: Scott Marler
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

Dear Mr. Rost:

We have reviewed your letter of July 28, 2006, regarding plans to reconstruct and add capacity to the I-29/I-80/I-480 Interstate Systems in Council Bluffs, Pottawattamie County, Iowa, and Omaha, Douglas County, Nebraska. We have also reviewed the *Threatened and Endangered Species Survey Technical Memorandum* (survey) that documents the results of the literature reviews and field surveys. We have the following comments.

We concur with your findings that, in regard to the 11 species considered during the survey, either no suitable habitat is present, or no effect is anticipated as a result of avoidance measures during project construction. Therefore, the proposed project is not likely to adversely affect threatened or endangered species. Should the project be modified or new information indicate endangered species may be affected, consultation should be initiated.

Thank you for the opportunity to provide comments. If you have any additional questions or concerns, please contact Heidi Woeber of my staff.

Sincerely,

Richard C. Nelson
Field Supervisor

S:\Office Users\Heidi\concurnlaaiadotI-2980480.doc

Iowa
Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

October 12, 2006

Mr. James P. Rost
Director, Office of Location and Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

RE: Environmental Review for Natural Resources
Council Bluffs Interstate System Improvements Project, Pottawattamie County, IA;
IM-029-3(62)54—13-78

Dear Mr. Solberg:

Thank you for inviting our comments on the impact of the above referenced project.

We concur with the Determination of Effect for Threatened and Endangered Species prepared by HDR Engineering, Inc. dated May, 2006 regarding the project identified above.

If you have any questions about this letter or if you require further information, please contact Keith Dohrmann at (515) 281-8967.

Sincerely,

Diane Ford-Shivvers, Supervisor
Policy and Coordination
Conservation and Recreation Division

DFS:kld

CC: Christine Schwake, Water Quality Bureau, Iowa DNR (by email)

FILE COPY: Keith L. Dohrmann

06-4661La.doc

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

January 28, 2009

Ref. No: IMN-29-3(62)54-13-78
Pottawattamie
Primary

Mr. Ralph Christian
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C 020378055

Dear Ralph:

RE: I-29 & I-80- Council Bluffs Interstate System Improvements Project (CBIS) Supplemental Historic / Architectural Intensive-Level Survey & Evaluation- *Segment Three*

Enclosed for your information and review is the Supplemental Historical / Architectural Intensive-Level Survey & Evaluation for the above-mentioned federal funded project. This evaluation / survey reviewed Segment Three of a 22-mile corridor involving Interstate-29 and Interstate-80 that runs through Omaha, Nebraska and Council Bluffs, Iowa.

Segment Three of this project includes a series of smaller parcels and is located in various places adjacent to or extended from the previously studied corridor. In total, 48 buildings and structures were found to be within the supplement project areas.

Of these properties, one property is listed on the National Register and four have been determined eligible for the National Register. These properties are listed below:

National Register Listed Property:

78-01714 Chicago, Rock Island & Pacific Railroad Passenger Depot, located at 1512 S. Main

National Register Eligible Properties:

78-02083 Farmers' Terminal Elevator (Bartlett Grain Elevator), Located at 2600 4th St. Eligible under Criteria A and C

78-02084 Wabash freight house (IA IS RR property)- Eligible under Criterion A

78-02099 East South Omaha Bridge Road Bridge, over Mosquito Creek- Eligible Under Criterion C

78-02100 CB&Q (Burlington) RR plate girder bridge, over Mosquito Creek- Eligible Under Criterion C

Avoidance or mitigation is recommended for these historic properties. Once design plans are finalized, a determination of effect will be reached regarding the properties and forwarded to you for your review.

If you concur with the findings of this supplemental investigation, please sign the concurrence line below and return this letter. If you have any questions regarding this project, please feel free to contact me.

Sincerely,

Matthew J.F. Donovan

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
Kris Riesenberg- Location and Environment
Leah D. Rogers- Principal Investigator- Tallgrass

Matthew J.F. Donovan
Office of Location and Environment
Matt.Donovan@dot.state.ia.us

Concur:

SHPO Historian Date: 3/6/09

FEB 0 6 2009

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

February 4, 2009

Ref. No: IMN-29-3(62)54-13-78
Pottawattamie
Primary

Mr. Doug Jones
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C 020378055

Dear Doug:

RE: I-29 & I-80- Council Bluffs Interstate System Improvements Project (CBIS)
Supplemental Phase I Archaeological Investigation /Segment Three
No Historic Properties Affected

Enclosed for your information and review is the Supplemental Phase I Archaeological Investigation for the above-mentioned federal funded project. This evaluation / survey reviewed Segment Three of a 22-mile corridor involving Interstate-29 and Interstate-80 that runs through Omaha, Nebraska and Council Bluffs, Iowa.

Segment Three of this project includes a series of smaller parcels and is located in various places adjacent to or extended from the previously studied corridor. Approximately 364.46 acres was surveyed by this archaeological investigation.

This archaeological investigation was conducted using an extensive archival search, along a pedestrian survey. Subsurface testing was conducted using bucket-augers, shovel tests, and soil probes. No previously unrecorded archaeological sites were recorded in the supplemental areas of Segment 3.

Two previously recorded archaeological sites, 13PW161 and 13PW192, were re-identified and additional information regarding these two sites was recorded.

Site 13PW161, the remains of the old Council Bluffs airport, was determined to be *not eligible* for the National Register in 2006 during the original survey. The present investigation determined that much of the site has been destroyed by commercial development since it first recorded. Due to this and the information recorded during the original investigation, Site 13PW161 remains not eligible for the National Register and no further work is recommended for it.

Site 13PW192, a historic scatter / dump, with various historic fauna remains. (Horse / Mule burials.) was determined not eligible for the National Register during the original 2006 investigation of the project area. This additional investigation supports the original findings that this site is not eligible for the National Register. No further work is recommended for this site.

Based on the findings of this investigation, the determination for these supplemental areas in Segment Three of this project is ***No Historic Properties Affected.*** If you concur with this determination, please sign the concurrence line below and return this letter. If you have any questions regarding this project, please feel free to contact me.

Sincerely,

Matthew J.F. Donovan

COPY

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
Dee Ann Newell- Location and Environment
Leah D. Rogers- Principal Investigator- Tallgrass

Matthew J.F. Donovan
Office of Location and Environment
Matt.Donovan@dot.iowa.gov

Concur:

Douglas W. Jones
SHPO Historian

2/13/2009
Date:

Jones, Doug [DCA] COPY

To: Donovan, Matt [DOT]

Cc: Jones, Doug [DCA]; Newell, Deeann [DOT]; Selmer, John [DOT]; LDRog215@aol.com

Subject: 020378055 IMN-29-3(62)54--13-78 Segment 3 Supp Phase I TH.pdf

Attachments: 020378055 IMN-29-3(62)54--13-78 Segment 3 Supp Phase I TH.pdf

Attached is the official SHPO comment letter for the above-referenced project, provided in accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations, 36 CFR Part 800 (revised, effective August 5, 2004). To read the document, you may need to download a free copy of Adobe Acrobat Reader at www.adobe.com.

Please note that you will not receive a hard copy of this letter by mail. There is no need to reply to this email unless you have specific questions or have problems opening the document. Feel free to contact me by email or phone.

Douglas W. Jones, Archaeologist and Review and Compliance Program Manager
State Historic Preservation Office
State Historical Society of Iowa
(515) 281-4358

SEP 17 2010

Iowa Department of Transportation
800 Lincoln Way, Ames, Iowa 50010 515-239-1035 *Fax* 515-239-1726

September 16, 2010

Ref. No: IM-029-2(55)49--13-78
Pottawattamie County
Primary

Mr. Douglas W. Jones
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C: 020378055

Dear Doug:

RE: Second Supplemental Phase I Archaeological Investigation, Council Bluffs Interstate System Project, Segment 3; *No Historic Properties Affected*

Enclosed for your review and comment is the Second Supplemental Phase I Archaeological Investigation for the above referenced federally funded project. The current investigation examined an additional 13 areas needed for Segment 3 of the interstate system project, including proposed railroad modifications.

This archaeological investigation consisted of an archival and site records search, pedestrian survey, and 24 subsurface tests (10 shovel tests, and 14 soil cores and auger tests). A total of 72 ac (29 ha) were surveyed as part of this project. No new archaeological sites were identified during the investigation of the supplemental areas.

Based on the current investigation, the project determination regarding archaeological resources is **No Historic Properties Affected**. Final effects to historic architectural properties will be submitted for SHPO comment in future correspondence. If you concur, please sign the concurrence line below, add your comments, and return this letter. If you have any questions, please contact me.

Sincerely,

Libby Wielenga
Office of Location and Environment
Libby.Wielenga@dot.iowa.gov

Enclosure
cc: John Selmer, District 4 Engineer
Dee Ann Newell, NEPA / OLE
Leah Rogers, Tallgrass Historians L.C.

Concur: Douglas W. Jones Date: 9/23/2010
SHPO Archaeologist

Comments:

From: Joseph_Slater@fws.gov [mailto:Joseph_Slater@fws.gov]

Sent: Monday, September 20, 2010 2:27 PM

To: Greenan, Colin [DOT]

Subject: Re: April 28, 2010 Environmental Concurrence Point Meeting Minutes - DRAFT

Colin,

Thanks for providing the concurrence packets for our review. The Service via this e-mail "concurs" with the 5 proposed projects as presented.

Joe

Joe Slater
USFWS
1511 47th Avenue
Moline, IL 61265
(309) 757-5800 ext.208

Mr. Nelson and Mr. Slater,

Please find attached DRAFT minutes for each of the five projects discussed at the April 28, 2010 Environmental Concurrence Point Meeting. Please review these projects and provide your concurrence via email by September 24, 2010. Returned concurrences/comments will be incorporated into the minutes and a FINAL copy of the minutes will be sent for your records.

Thank you.

Colin Greenan
Office of Location and Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

office phone: 515-233-7711
cell: 515-460-0345
fax: 515-239-1726

colin.greenan@dot.iowa.gov(See attached file:
DRAFTMINUTES_CBISSeg3_CP2&3.pdf)(See attached file:
DRAFTMINUTES_PolkIA316_CP5.pdf)(See attached file:
DRAFTMINUTES_PolkUS65_CP1-5.pdf)(See attached file:
DRAFTMINUTES_US20Dyersville_CP1&2.pdf)(See attached file:
DRAFTMINUTES_DickinsonIA86_CP3&4.pdf)

Iowa Department of Transportation
800 Lincoln Way, Ames, Iowa 50010
515-239-1510
FAX: 515-239-1726

September 23, 2010

Ref: Pottawattamie County, Iowa
Douglas County, Nebraska
IM-029-2(55)49--13-78
PIN: 04-78-029-010-03

Mike LaPietra
Federal Highway Administration
105 6th Street
Ames, Iowa 50010

Dear Mr. LaPietra:

The Iowa Department of Transportation (DOT) and Nebraska Department of Roads (NDOR) are proposing to reconstruct and add capacity to the I-29/I-80/I-480 Interstate System in Council Bluffs, Pottawattamie County, Iowa and Omaha, Douglas County, Nebraska as part of the Council Bluffs Interstate System (CBIS) Improvements Project. This letter regards threatened and endangered species for Segment 3 of the CBIS Improvements Project.

As part of the CBIS Improvements Project, the Iowa DOT is in the process of studying an addendum to Segment 3 of the project which includes several options to improve and consolidate railroad operations in coordination with reducing construction costs of the proposed interstate improvements. In consideration of this study, the Iowa DOT expanded the environmental study area of Segment 3 of the CBIS Improvements Project (Figure 1 enclosed).

In July of 2008 CH2M Hill conducted an intensive pedestrian survey of the expanded area with respect to potential habitat for the listed species addressed in the original CBIS Improvements Project. Potential perching habitat for the Bald eagle (*Haliaeetus leucocephalus*) and potential marginal habitat for the Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) are present in the expanded study area.

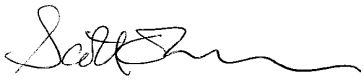
Another expansion of Segment 3 includes an area surrounding the Southwest Iowa Renewable Energy (SIRE) service railroad track (Figure 1). In November 2008 HDR Engineering, Inc. evaluated the SIRE site for listed species addressed in the original CBIS Improvements Project. Potential habitat for the Eastern massasauga rattlesnake is present in a few palustrine emergent wetlands within the SIRE site.

The bald eagle was removed from the federal list of threatened and endangered species on August 9, 2007 and upgraded from endangered to special concern within the state of Iowa on October 14, 2009. Neither the bald eagle or the Eastern massasauga rattlesnake are a federally listed threatened or endangered species thus, reinitiation of consultation with the U.S. Fish and Wildlife Service (Service) is not required. The Iowa DOT will coordinate with the Iowa DNR regarding potential marginal habitat for the state-listed Eastern massasauga rattlesnake within the expanded study area and the SIRE site.

The Iowa DOT has determined that the proposed project will have no effect to federally listed species or result in the destruction or adverse modification of designated critical habitat. Because consultation with the Service is not required for no effect determinations, Iowa DOT requests your review and concurrence.

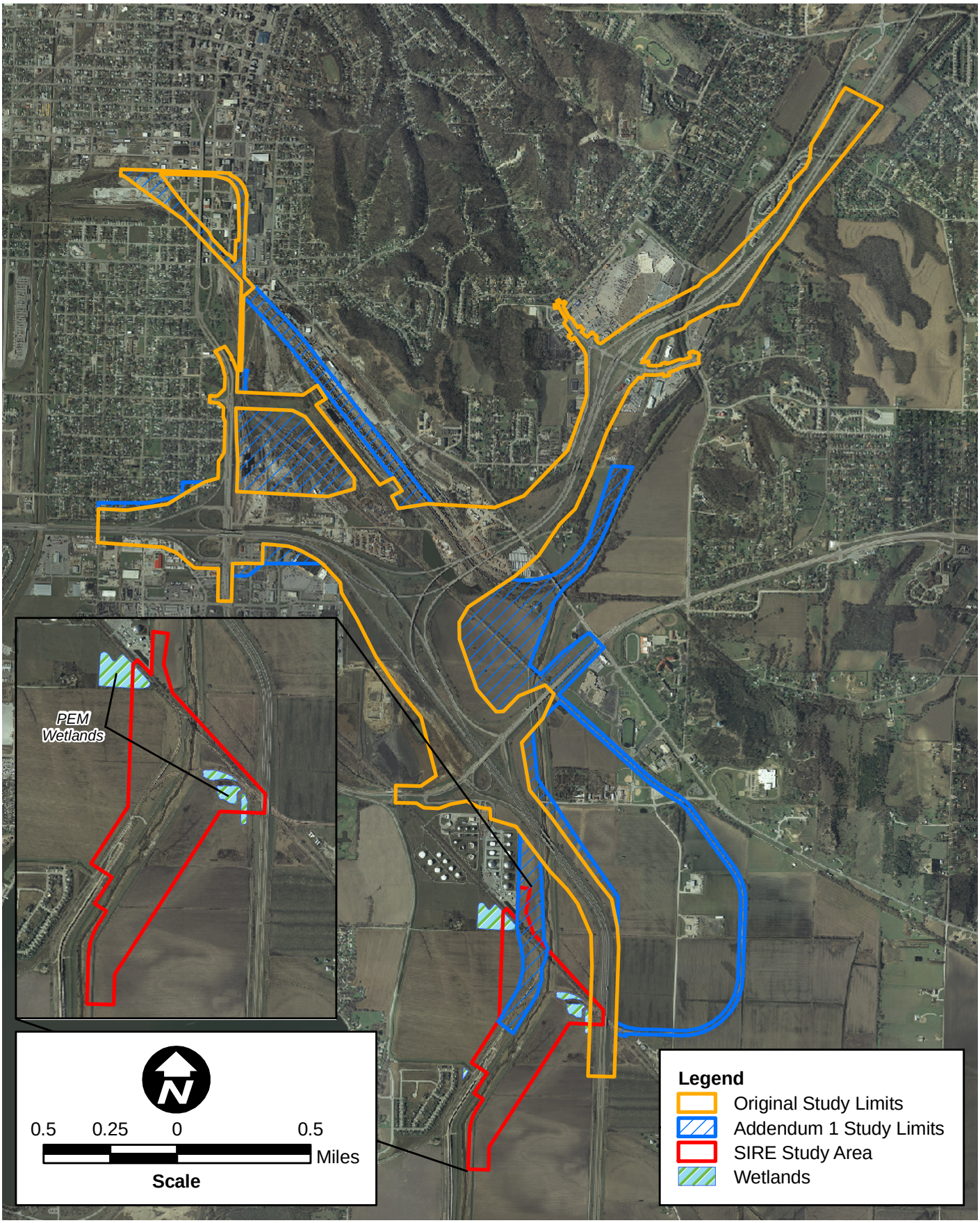
If you have questions or need additional information, please contact me at 515.239.1510 or Jill Rudloff at 515.239.1698.

Sincerely,



Scott Marler
Environmental Resources Manager
Office of Location and Environment

SCM:JR:sm
Enclosures
cc: J. Vine, Location & Environment
J. Rudloff, Location & Environment (file)
M. Solberg, Location & Environment



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HDR

SIRE Study Area

Council Bluffs Interstate System Improvements Project
Council Bluffs, Iowa

DATE
January 2009

FIGURE
1

Iowa Department of Transportation
800 Lincoln Way, Ames, Iowa 50010
515-239-1215
Fax: 515-239-1726

October 4, 2010

Ref. No: IMN-029-2(55)49--13-78
Pottawattamie
Primary

R&C 020378055

Mr. Ralph Christian
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

Dear Ralph:

RE: Determination of Effect I-29 & I-80- Council Bluffs Interstate System Improvements Project (CBIS) Segment Three

As noted in our previous consultation for segment three of this project on January 29, 2009, one property, the C.R.I.&P. RR Depot(78-01714) is listed on the National Register of Historic Places. Four additional properties are determined eligible for the National Register – Farmers Terminal (Barlett) Grain elevator (78-02083), Wabash freight house (78-02084), East South Omaha Road Bridge (78-02099), and CB&Q RR plate-girder bridge (78-02100). Enclosed are aerial photos for your reference in discussion of effects of project actions upon these resources..

C.R.I.&P. RR Depot(78-01714)
Removal of the third track from the building (out of three tracks adjacent to the Depot building) is being considered as part of the project, or could potentially be done as a future action outside of this project. Additionally, a new track could be constructed in front of the Depot building between the existing tracks. The boundaries of the National Register site do not include any of the railroad tracks in front of the building.

Farmers Terminal (Barlett) Grain elevator (78-02083)
Tracks on the east side of the Bartlett elevator would be removed or reconfigured. Of the ten tracks on the west side of the elevator, the five tracks nearest Bartlett would remain in place. The five tracks further to the west would be removed. The number and arrangement of tracks was not a factor in determining this property eligible for the National Register under criterion A and C.

Wabash freight house (78-02084)
An additional rail line would be constructed approximately 400 feet east of the freight house. Access to the freight house would remain the same. A realigned 29th Avenue would be constructed approximately 100 feet south of the freight house. There would not be any rail construction or removal in front of this site.

This building appears to be all that is left of a Wabash railroad roundhouse and shops facility that existed at this location from at least 1885. The railroad freight house is currently surrounded by industrial storage with few rail resources.

East South Omaha Road Bridge (78-02099)
Interstate and rail improvements would be constructed approximately 30 feet west of the historic bridge. Construction of a ditch to the west of this bridge is being considered as part of this project. Access to the historic bridge would remain the same

CB&Q RR plate girder bridge (78-02100)
This bridge is still actively used as part of the main line of BNSF Railway's Council Bluffs Subdivision (from Council Bluffs to Pacific Junction, Iowa). Construction of additional railroad track for the project would not affect the CB&Q railroad bridge over the Mosquito Creek. No track changes within 25 feet of the bridge would occur, and the bridge would not be modified. Access to the historic bridge would remain the same.

The proposed action would not alter characteristics that make these five properties eligible for listing on the National Register. Therefore, we believe the action to be a No Adverse Effect to these historic properties.

Other properties were identified in the area of potential effect for Segment three of this project and. they were evaluated as not eligible for listing on the National Register. Therefore, we submit a finding of No Historic Properties affected for the remainder of the properties previously submitted to your office for review.

If you concur with these findings, please sign the concurrence line below and return this letter. If you have any questions regarding this project, please feel free to contact me.

Sincerely,

Randall B. Faber
Cultural Resources Team Leader
Office of Location and Environment
randall.faber@dot.iowa.gov

RBF
Enclosure
cc: John Carns, Iowa DOT, District 4
Jan Full, Tallgrass Historians
Mike LaPietra, Federal Highway Administration

Concur:

for the Iowa State Historic Preservation Officer Date: Oct 21, 2010

Iowa Department of Transportation
800 Lincoln Way, Ames, Iowa 50010
515-239-1510
FAX: 515-239-1726

October 6, 2010

Ref: Pottawattamie County, Iowa
Douglas County, Nebraska
IM-029-2(55)49--13-78
PIN: 04-78-029-010-03

Kelly Poole
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319

Dear Ms. Poole:

The Iowa Department of Transportation (DOT) and Nebraska Department of Roads (NDOR) are proposing to reconstruct and add capacity to the I-29/I-80/I-480 Interstate System in Council Bluffs, Pottawattamie County, Iowa and Omaha, Douglas County, Nebraska as part of the Council Bluffs Interstate System (CBIS) Improvements Project.

A request for environmental review of the CBIS Improvements Project, including a *Threatened and Endangered Species Survey Technical Memorandum*, was submitted to the Iowa DNR on July 28, 2006 (enclosed). The Iowa DOT received concurrence from the Iowa DNR on August 30, 2006 stating that the proposed project is not likely to adversely affect threatened or endangered species (enclosed).

As part of the CBIS Improvements Project, the Iowa DOT is in the process of studying an addendum to Segment 3 of the project which includes several options to improve and consolidate railroad operations in coordination with reducing construction costs of the proposed interstate improvements. In consideration of this study, the Iowa DOT expanded the environmental study area of Segment 3 of the CBIS Improvements Project. Another expansion of Segment 3 includes an area surrounding the Southwest Iowa Renewable Energy (SIRE) service railroad track. The expanded Segment 3 area and the SIRE site are shown in Figure 1 (enclosed).

Expanded Area of Segment 3

In July of 2008 CH2M Hill conducted an intensive pedestrian survey of the expanded area study of Segment 3 with respect to potential habitat for the listed species addressed in the original CBIS Improvements Project. Potential perching habitat for the Bald eagle (*Haliaeetus leucocephalus*) and potential marginal habitat for the Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) are present in the expanded study area of Segment 3 (see enclosed CH2M Hill August 2008 Technical Memo). Please note that since the publishing date of CH2M Hill's Technical Memo the bald eagle was upgraded at the state level from endangered to special concern.

Potential, marginal habitat for the Eastern massasauga rattlesnake, Area 3I of the expanded study area of Segment 3, will not be impacted by the project. The railroad will no longer be utilized and the area of the existing rail, embankments, and ditches will be left untouched.

SIRE Site

In November 2008 HDR Engineering, Inc. evaluated the SIRE site for listed species addressed in the original CBIS Improvements Project. A majority of the SIRE site is regularly cultivated for row crop production and the site is bisected by Mosquito Creek. A few palustrine emergent wetlands exist in the vicinity of the SIRE service railroad track connection with the BNSF railway track in the eastern extreme of the SIRE site (see enclosed HDR Engineering, Inc. February 11, 2009 Threatened and Endangered Species Habitat Survey). These wetlands appear to have resulted from borrow activities that created noticeable depressions within the adjacent agricultural fields. Another wetland area exists on the British Petroleum/Amoco property in the northwest corner of the SIRE site. The wetlands located at the SIRE site may provide marginal habitat for the eastern massasauga rattlesnake, though none were observed during the site survey.

Determination of Effect

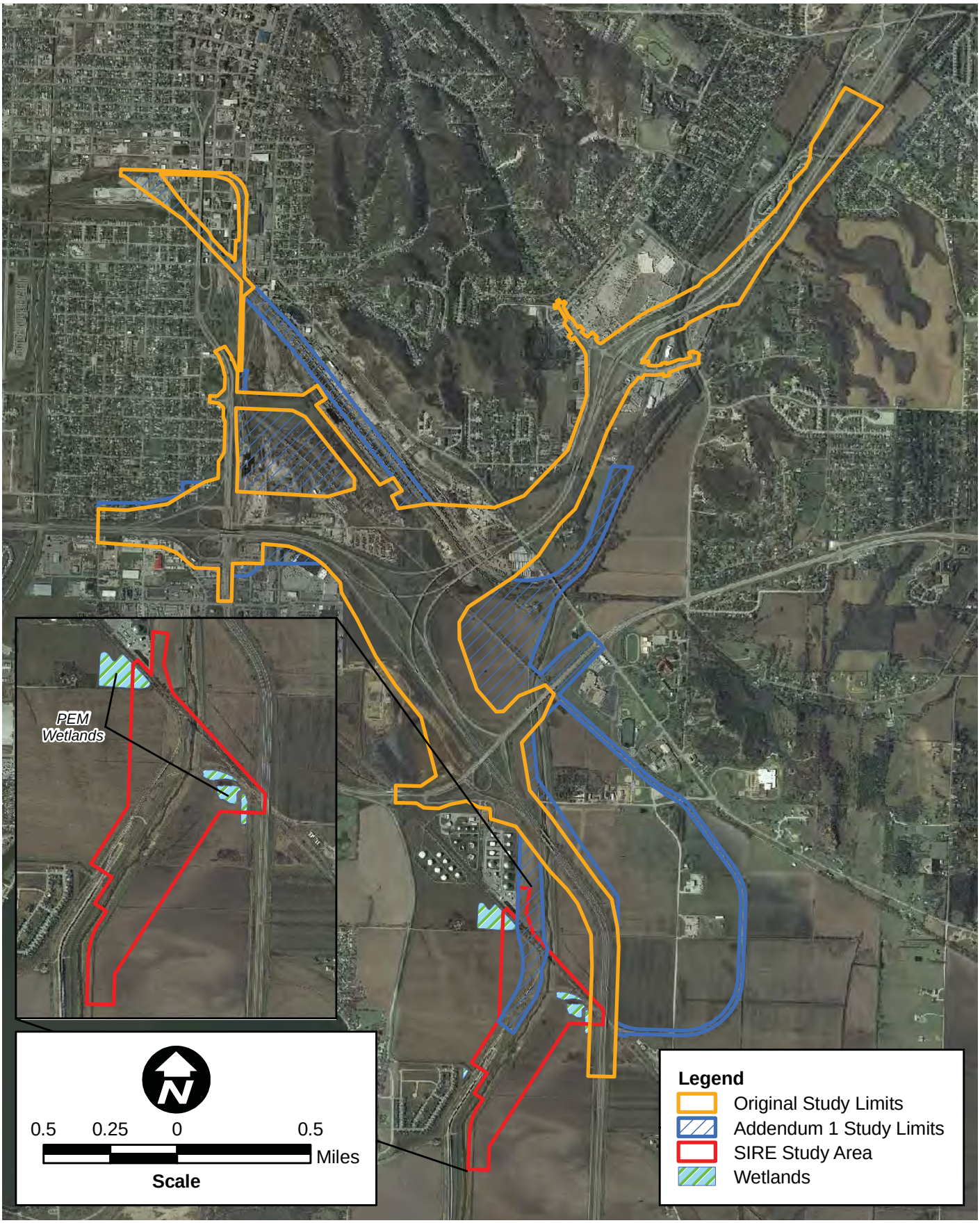
The project area and vicinity are highly urban and natural areas are extremely fragmented. Based on literature and data reviews for the project, Iowa DOT has determined, under the delegation provided by FHWA, that the proposed project is not likely to adversely affect federally or state-listed species or result in the destruction or adverse modification of federally designated critical habitat. A Determination of Effect for Threatened and Endangered Species form is enclosed. *We request Iowa DNR's review and response for this project.*

This project is a federal-aid project. If you have questions or need additional information, please contact me at 515.239.1510 or Jill Rudloff at 515.239.1698.

Sincerely,

Scott C. Marler
Environmental Resources Manager
Office of Location and Environment

SCM:JR:sm
Enclosures
cc: J. Vine, Location & Environment
J. Rudloff, Location & Environment (file)
M. Solberg, Location & Environment



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HDR

SIRE Study Area

Council Bluffs Interstate System Improvements Project
Council Bluffs, Iowa

DATE
January 2009

FIGURE
1

Determination of Effect for Threatened & Endangered Species

Project Name:		Highway No.:
Council Bluffs Interstate System Improvements - Segment 3 Addendum		I-29/I-80
Project No.:		Station No.:
IM-029-2(55)49--13-78		
County:	Letting Date:	PLSS/UTM:
Pottawattamie (IA)		

Project Description:

Addendums to Segment 3 of the Council Bluffs Interstate System Improvements Project within Council Bluffs, Iowa. A detailed project description is provided in the attached Technical Memorandums. The original study area of Segment 3 has been expanded to include an area for consolidating some railroad corridors and expansion at an area surrounding the Southwest Iowa Renewable Energy (SIRE) service railroad track. Figure 1 shows the original and expanded study area.

Are there documented occurrences of T&E species within 1 mile of the project? ☐ Yes ☒ No

If yes, list species:

Are there documented occurrences of T&E species within the limits of construction? ☐ Yes ☒ No

If yes, list species:

Is there likely to be habitat for T&E species within the project's limits of construction? ☒ Yes ☐ No

If yes, list species:

A T&E Species Survey was completed for the original Segment 3 study area (January 2006), the expanded CBIS railroad consolidation study area (August 2008), and the Southwest Iowa Renewable Energy (SIRE) railroad track study area (February 2009). A Determination of Effect was prepared for Segments 1, 2, and 3 based on the results of the January 2006 survey. The initial survey investigated eleven species identified as potential concerns by the USFWS, Iowa DNR, and NGPC: pallid sturgeon, lake sturgeon, sturgeon chub, piping plover, interior least tern, American ginseng, prairie bush clover, western prairie fringed orchid, bald eagle, Indiana bat, and the eastern massasauga rattlesnake. Because American ginseng is not listed in Pottawattamie County, and because the piping plover, interior least tern, pallid sturgeon, lake sturgeon, and sturgeon chub are species associated with the Missouri River, which is not within Segment 3, these species were not considered as part of the other two surveys. The aforementioned surveys determined that Segment 3 contains potential marginal habitat for the eastern massasauga rattlesnake and marginal perching habitat for bald eagle.

Describe current geographic setting *(native habitats, adjacent land use, etc.)* and potential project impacts:

The attached reports (2008 and 2009) describe the current geographic setting, including a description of the potential habitat areas for T&E species. No designated critical habitat for T&E species exist within the study area. Consequently, the proposed project for Segment 3 would not result in the destruction or adverse modification of federally designated critical habitat.

No T&E species were detected within the Segment 3 study area, but potential habitats for eastern massasauga rattlesnake and bald eagle are present within the study area. However, the bald eagle is no longer a federal or state listed threatened or endangered species, The project for Segment 3 "May Affect – Not Likely to Adversely Affect" the eastern massasauga rattlesnake; the following page provides a determination of effect for the species.

Will the project likely require borrow? ☒ Yes ☐ No

DETERMINATION OF EFFECT - ACTION

☐ No Effect ☐ No Effect *(by following recommendations)* ☐ Needs Further Study
☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

Further Study – *Consisting of the Following*	**Iowa DOT Recommendations**
Iowa DOT does not feel that any further study is warranted.	Iowa DOT recommends that the projects proceed as designed.

References:

☒ Natural Areas Inventory ☐ T&E Species Range Maps ☒ Aerial Photos ☐ Soils of Concern Data
☒ Other: T&E Species Surveys (Segment 3 Addendum 08/08 and SIRE Site Addendum 02/09)

J. Rudloff — *Prepared By:*

9-29-2010 — *Date:*

INDIVIDUAL SPECIES EVALUATION - Determination of Effect for Threatened & Endangered Species (Continued)

Project Name:		Highway No.:
Council Bluffs Interstate System Improvements Project Segment 3		I-29/I-80
Project No.:		Station No.:
IM-029-2(55)49—13-78		
County:	Letting Date:	PLSS/UTM:
Pottawattamie (IA)		

SPECIES EVALUATION

Species of Concern: ☐ Federal ☒ State	Species Trait or Characteristic:
Eastern Massasauga Rattlesnake	Moist, low swale habitat.

Description of Project Impacts:
Filling of low areas during roadway expansion

Direct Effects from habitat/species impacts: ☐ Take ☐ Harm ☒ Harass

Although no eastern massasauga rattlesnake individuals were identified during the three surveys, marginal potential habitat is present within emergent wetlands found within the original study area (Area 3C) and expanded Segment 3 study area (Area 3I and SIRE Expansion) shown in the attached reports. Study area habitation by the eastern massasauga rattlesnake is unlikely, although the emergent wetlands in the SIRE Study Area (February 2009) are determined to constitute potential habitat. However, the development or actively cultivated nature of the areas adjacent to the wetlands, in addition to the presumption that the wetlands were formed as a result of borrow activities, make it unlikely that the eastern massasauga rattlesnake would occur in the SIRE Study Area. In addition, within the CBIS Railroad Consolidation Study Area (August 2008), wet ditches at the base of the railroad embankment in conjunction with several adjacent fallow fields may provide marginal habitat for the eastern massasauga rattlesnake; the Segment 3 project would not involve disturbance of the railroad embankment where marginal habitat was noted (Area 3I).

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Indirect Effects from habitat/species impacts: ☐ Harm ☐ Harass

The proposed CBIS Segment 3 improvements are not likely to induce growth. No new interchanges are planned along Segment 3. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on eastern massasauga rattlesnake or its habitat are anticipated.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

Cumulative Effects from habitat/species impacts: ☐ Harm ☒ Harass

The CBIS Segment 1 project is mostly complete and involved disturbance of forested habitat not likely to host eastern massasauga rattlesnake. A portion of the wetland component of Area 1C identified as marginal habitat would be disturbed during construction of Segment 2 (see attached Figure 2 from January 2006 report). However, the remaining portion of the wetland area is owned by the Western Historic Trail Center (WHTC) who currently has no plans to develop the wetland.

It is possible that some potential habitat would be impacted by other projects in the Council Bluffs metropolitan area, but minimal potential habitat is likely present based on the development that has occurred. Commercial development has occurred at the Metro Crossing Shopping Center (see Figure 1 from August 2008 report) and is continuing within the current and expanded Segment 3 study area. Construction for the commercial project would likely involve destruction of most of the potential habitat prior to disturbance by the Segment 3 Project. Consequently, the existing marginal habitat would be reduced, essentially eliminating the potential for hosting the species by the time the Segment 3 Project would be constructed. Consequently, disturbance of potential habitat would cause insignificant cumulative effects.

☒ Effects beneficial, insignificant, and/or discountable ☐ Effects possible but can be managed ☐ Effects are major

NOTES:
Based on consideration of direct, indirect, and cumulative effects on eastern massasauga rattlesnake and its habitat, the determination of effect for the Segment 3 project is “May affect – Not likely to adversely affect”.

SPECIES SPECIFIC DETERMINATION OF EFFECT

☒ May Affect – Not Likely to Adversely Affect ☐ May Affect – Likely to Adversely Affect

From: Poole, Kelly [DNR]
Sent: Tuesday, December 07, 2010 2:49 PM
To: Rudloff, Jill [DOT]
Subject: RE: Request for review - Council Bluffs Interstate System Improvements Project

Jill,

Thank you for inviting the Department to review and comment on this project.

Based on the Department's review of records and data available at the time of this request and the project information provided by the DOT, the Department has determined that the proposed project may affect, but is not likely to adversely affect federally listed or state listed species or result in the destruction or adverse modification of designated critical habitat.

Regards,
Kelly

~~~~~~

Kelly Poole
Iowa Department of Natural Resources
Land and Waters Bureau
502 E 9th Street | Des Moines, IA 50319
Ph. 515.281.8967 | kelly.poole@dnr.iowa.gov
~~~~~~

Iowa Department of Transportation

December 13, 2010

Victoria J. Rutson
Director, Office of Environmental Analysis
Surface Transportation Board
395 E. Street, S.W.
Washington, DC 20423-0001

Re: Invitation to Become a Cooperating Agency and Participating Agency
Council Bluffs Interstate System Improvement Project, Segment 3
Council Bluffs, Iowa

Dear Ms. Rutson:

For the purpose of complying with the National Environmental Policy Act (NEPA), the Federal Highway Administration (FHWA), in cooperation with the Iowa Department of Transportation (Iowa DOT), is preparing an Environmental Assessment (EA) for Segment 3 of the Council Bluffs Interstate System (CBIS) Improvement Project in Pottawattamie County, Iowa.

Because your agency has jurisdiction by law and/or has special expertise with respect to an environmental issue, we are inviting your agency to be a cooperating agency with FHWA in the preparation of the EA for this project. This is in accordance with the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA (40 CFR 1501.6). As a result of your involvement as a cooperating agency in the preparation of the EA, and after an independent review of the EA to ensure that your comments and suggestions have been addressed, you can expect that this EA will satisfy your NEPA obligations and that you can adopt the document without the need to re-circulate it.

Pursuant to Section 6002 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (23 USC §139), we are also inviting your agency to be a participating agency in the NEPA process. Participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the potential environmental or socioeconomic impacts of a project that could substantially delay or prevent an agency from granting a permit or other approval that is needed for a project. We suggest that the role of your agency in the development of this project should include the following as they relate to your area of expertise:

1) Review the project purpose and need, the methodologies and level of detail required in the EA analysis.
2) Participate in coordination meetings as needed.

3) Provide timely review and comment on the EA to reflect your agency's views and concerns on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

To either accept or decline this invitation, please respond to FHWA in writing prior to January 3, 2011. If your agency chooses to decline the invitation, your response should state your reasons for declining. Pursuant to Sec. 6002 of SAFETEA-LU, any federal agency that chooses to decline the invitation must specifically state in its response that it:

- Has no jurisdiction or authority with respect to the project;
- Has no expertise or information relevant to the project; and
- Does not intend to submit comments on the project.

Enclosed with this letter is a copy of the EA for your review and comment. We would appreciate receiving your comments by January 7, 2011. If you have any questions or would like to discuss the project in more detail, please contact Janet Vine at 515.239.1467 or janet.vine@dot.iowa.gov.

Thank you for your cooperation and interest in this project.

Sincerely,

James Rost

James Rost, Director
Office of Location and Environment
Iowa DOT

Enclosures:
EA

cc:
John Carns, Iowa DOT
Janet Vine, Iowa DOT
Mike LaPietra, FHWA
Andy Wilson, FHWA

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Economics, Environmental Analysis, and Administration

December 21, 2010

Michael LaPietra
Realty and Environmental Manager
Federal Highway Administration
Iowa Division
105 6th Street
Ames, Iowa 50010

RE: Council Bluffs Interstate System Improvements Project, Tier 2, Segment 3, Pottawattamie County, Iowa, Environmental Assessment; Acceptance of Invitation to be a Cooperating Agency and a Participating Agency

Dear Mr. LaPietra:

Thank you very much for your letter of December 13, 2010 inviting the Surface Transportation Board (Board) to act as a cooperating agency and a participating agency in the preparation of an Environmental Assessment for the proposed Council Bluffs Interstate System Improvements Project in Pottawattamie County, Iowa. The proposal calls for a number of infrastructure improvements that would enhance the safety and efficiency of both roadway and railroad networks. In particular, the proposal would require the construction and operation of new rail line, as well as the abandonment of some existing rail line.

As you know from our meeting on November 30, 2010, the Board is authorized by Congress to license new rail line construction and abandonments.[1] Both actions are considered to be "major federal actions" requiring environmental analysis under the National Environmental Policy Act (NEPA). The Board's Office of Environmental Analysis (OEA) is the office responsible for conducting the environmental review process to ensure the Board's compliance with NEPA and related environmental laws. Based on the information provided, and pursuant to 40 C.F.R. § 1501.6, we are very pleased to accept the invitation to be a cooperating agency with the Federal Highway Administration and the Iowa Department of Transportation. In addition, we accept your invitation to act as a participating agency, pursuant to 23 U.S.C. § 139 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users. In

[1] The Board's regulatory authority extends to intrastate transportation that uses the interstate rail network. See 49 U.S.C. § 10501(a)(2)(A).

this role, we agree, among other things, to identify issues of concern early in the process in order to prevent substantial delay of the project.

We look forward to working with you and the project team to complete this analysis. If you have any questions or would like to discuss this matter further, please contact Diana Wood of my staff at (202) 245-0302 or email at woodd@stb.dot.gov.

Sincerely,

Victoria Rutson
Director
Office of Environmental Analysis

cc: James Rost, Iowa Department of Transportation